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ABSTRACT

Four projects, conducted as part of an ongoing programmatic research effort to develop and evaluate curricular modules for Head Start classes, are presented. Project A was an attempt to identify the effectiveness of an intervention approach that involved the introduction into two classes of curricula in language, mathematics, motivation, and parent involvement. The analysis of the combined curriculum effects on motivation suggested that the procedures used to evaluate the results may need to be supplemented in future intervention attempts by a more precise and more curriculum-related approach. The specific purpose of Project B was to introduce the motivation curriculum into three classes and to provide evidence for its further and more comprehensive refinement. An evaluation of the direct effects of the curriculum on motivational variables again suggested the advisability of supplementing future evaluations with a more exacting and curriculum-related approach. In Project C, an experimental version of a music curriculum for Head Start children was introduced into two classes by itself and into two classes in combination with a physical activities curriculum. An experimental test of music achievement did not reflect the effects of the curriculum relative to a control group. Project D consisted of the development and presentation of an experimental physical activities curriculum by itself in two classes and with the music curriculum. Results were inconclusive. (Author/CK)

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Final Report on Continuation of Programmatic Research on Curricular Modules for Early Childhood Education and Parent Participation

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The research reported herein was performed pursuant to Grant Number 9929 with the United States Office of Economic Opportunity. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment on the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official position or policy of the Office of Economic Opportunity.

Center for Research in Early Childhood Education
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September 1971

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FOREWORD

This report describes the continuation of programmatic research in development of preschool curricula through four projects involving tryout of four modules either singly or in various combinations. In two areas, language and mathematics, detailed manuals have previously been made available. Four additional manuals are now being presented separately, for music, physical activities, motivation, and home activities designed to foster cognitive and social-emotional development.

From September through January, Renato Espinosa, as Assistant Director of the Center, exercised general supervision over much of the work reported herein. In February, this role was assumed by J. Michael O'Malley, who also planned the statistical analyses and the reporting of results. All of the staff members of the Center worked on one or more aspects of the program.

Doris Crowell, in collaboration with a consultant in physical education, Delores Curtis, and assisted by several members of the Center staff (June Kimura, Patricia MacDonald, and Christina Anderson), developed a physical activities curriculum. Together, they supervised its initial tryout in four classes. Their efforts were supplemented in the development of certain units by an additional consultant, Eloise Hayes.

Two of the Center staff, Annette Okimoto and Patricia MacDonald, worked with a consultant in music, Marvin Greenberg, in revising a music curriculum and in overseeing its application in several classes. Allen Trubitt, as well as Anita Trubitt, who had taught the music curriculum, served as consultants to the Center in reviewing it.

Gloria Daley taught the language unit and Phyllis Loveless the mathematics unit in one Head Start class; and, along with Annette Okimoto, they conducted an individualized program with parents of Head Start children that

concentrated on the development of home activities. Doris Crowell later assisted in coordinating results of this effort with products of parent programs developed and applied by the Center in previous years.

Under a subcontract with Fordham University, Bonnie Ballif and two research assistants, Leticia Asuzano and Rosanne Alberts, worked closely with the Center in the initial preparation and revision of this curriculum. Gertrude Zane, a teacher-director of a Head Start Center, presented the motivation curriculum and later worked with the staff on revising it. Others who were directly concerned with the application of the motivation curriculum include Carole Hodges, Kay Linn, Lynne Solem, and Jane Wilson. A short-term summer staff member, Stephanie Feeney, concentrated on development of brief, criterion-referenced tests of the outcomes of units of the motivation curriculum for possible future use.

Assistants in research who did a variety of work, such as examining, observing, and some aspects of data processing, include Christina Anderson, Virginia Lerner, and June Kimura. The latter had major responsibility for organizing data for analysis and maintaining records on computer output. Robert Bloedon, assisted by Ruth Norton, served as the computer programmer.

Paul Horst and Ledyard R Tucker gave valuable consultation on questions of statistical analyses as well as certain details of computer programming.

Frank Payne worked regularly with the Center on a variety of statistical problems as well as in the general area of developing curriculum for motivation and testing motivation. He and Michael O'Malley consulted with Stanley Coopersmith, Lawrence Kohlberg, and Robert Hess, who reviewed the motivation curriculum. Fred Bail and Peter Dunn-Rankin assisted in developing general plans and specific techniques for analyses of data.

This report was typed and processed by Yaeko Santoki, Lynette Tong, Sharon Suzuki, Louise Inouye, Deborah Chang, and Susan Fukumoto.

Others who worked with the Center on part-time and/or temporary bases include Jan Fotos, Caroline Murata, Johnson Lee, Jacqueline Martin, Judith Young, Annie Worth, Anthony Kwak, and Mary Shusta.

The cooperation of the following teachers and aides is gratefully acknowledged: Gertrude Zane, Sharon Kehano, Edith Kashinoki, Janet Francisco, Helen Okuno, Charlotte Tamai, Carole Hochfelson, Ruby Kaneao, Marshann Snyder, Ellen Freitas, Harriet Roxburgh, Bob McGreevy, Loretta DeCanto, Paulette Carroll, Rosebell Santos, Elizabeth Ann Gerding, L. Mercado, P. Geiger, Mary Marquez, M. Kamaunu, Hannah Lou Bennett, Anita Trubitt, Dorene Tang, Barbara Reyes, Jane Iwashita, Violet N. Pelio, Laura Takashiba, and Julia A. T. Amamalin.

Additional persons to whom the Center is obligated for their cooperation include: Mary Lutu, Kaoru Uto, and Ray Blue of the Hawaii Department of Education; Joan Malama and Karen Wise of Honolulu City & County Model Cities Program; and the staff of the Honolulu Community Action Program.

Abstract

The University of Hawaii Center for Research in Early Childhood Education conducted four projects in 1970-71 as part of an ongoing programmatic research effort to develop and evaluate curricular modules for Head Start classes. These projects were intended to provide evidence by which to further refine the curricular modules being developed.

Project A, the first project, was an attempt to identify the effectiveness of an intervention approach that involved the introduction into two classes of curricula in language, mathematics, motivation, and parent involvement. The results of the evaluation, the general form of which was to contrast the treatment group with comparison groups, supported the effectiveness of the total curriculum in producing superior performance on dependent variables related to language and mathematics. The analysis of the combined curriculum effects on motivation suggested that the procedures used to evaluate the results may need to be supplemented in future intervention attempts by a more precise and more curriculum-related approach. The parent program generally maintained a high level of attendance and was effective in altering parental attitudes toward child-rearing practices.

The specific purpose of Project B was to introduce the motivation curriculum into three classes and to provide evidence for its further and more comprehensive refinement. Based on recommendations of teachers and Center staff that arose in the course of Projects A and B, the motivation curriculum was modified by clarifying and augmenting the activities and by increasing the relevance of the suggestions for teacher-child interaction. An evaluation of the direct effects of the curriculum on motivational variables, as in Project A, again suggested the advisability of supplementing future evaluations with a more exacting and curriculum-related approach.

In Project C, an experimental version of a music curriculum for Head Start children was introduced into two classes by itself and into two classes in combination with a physical activities curriculum. The evaluation of this curriculum depended heavily upon content analyses by experts in the music field and upon teacher reactions and recommendations. The general impression of these evaluators was highly favorable, with the reservation that the curriculum guide needed revision for teachers who lacked musical sophistication. An experimental test of music achievement did not reflect the effects of the curriculum relative to a control group; however, the test should undergo considerable refinement and further tryout before decisions based upon it are made about the effectiveness of a curricula.

Project D consisted of the development and presentation of an experimental physical activities curriculum by itself in two classes and with the music curriculum, as described in Project C, in another two classes. Teacher comments and reactions were assimilated into the curriculum as a means of developing a more coherent and practicable approach to teaching physical activities. The results from one experimental instrument that was available were inconclusive, but clearly indicated the need for more adequate assessment of physical development at the preschool level.

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CHAPTER I

INTRODUCTION

The Center for Research in Early Childhood Education (CRECE), since its inception in 1966 and increasingly since 1968, has directed effort toward the production and evaluation of curricular modules to be used by teachers of Head Start classes. Such units have been produced in areas that are considered important to the development of cognitive and affective skills in early education, particularly some that will help children from lower socio-economic backgrounds compete effectively in school with their middle-class peers. The first four curricular modules were in the areas of language skills, quantitative skills, motivation to achieve in school, and parent participation. These four curricula have been tested on a variety of children over a period of at least two years and have been successively refined for use in preschool classes.

The Center, until 1970 known as the Head Start Research and Evaluation Center, sponsored the further development and evaluation of a preschool language curriculum and related parent programs in 1968-69 (Herman & Adkins, 1970). The language curriculum is structured toward the development of language proficiency with respect to conversations, labels, verbs, colors, questions, opposites, and prepositions. The principal methods used in the curriculum are individual and small group instruction. This program was presented in a number of classes in combination with a parent program with either a cognitive or a social-emotional orientation and was contrasted with a combination of both a curriculum and a parent program that had a social-emotional orientation.

Results indicated that children with experience in the language curriculum, regardless of parent program, generally outperformed the children with experience in the social-emotional curriculum on a variety of variables related to intelligence and verbal ability. Furthermore, children in language classes whose parents were involved in the cognitively-oriented curriculum performed better on language measures than children whose mothers participated in training with a social-emotional emphasis. Mothers active in either program gained in areas related to personal participation, motivation, and perceived control.

A curriculum designed to teach preschool children motivation to achieve in school was initiated by the Center in 1968-69 and further developed during 1969-70, in coordination with continued attempts to develop a unique instrument to evaluate motivation to achieve in school, the Gumpgookies (Adkins & Ballif, 1970b). The motivation curriculum is based upon a theoretical conception of motivation to achieve in school as being comprised of five distinct components: affective, enjoying school; conceptual, seeing one's self as a learner; purposive, conceiving objectives and plans; instrumental, completing the steps toward goal attainment; and evaluative, appraising the success of one's efforts. These processes, which it is thought can be acquired and used by a child irrespective of any particular content, are taught principally by a combination of modeling and social reinforcement. Results of the initial tryout of the curriculum were considered sufficiently promising to warrant its revision and elaboration. The Gumpgookies was administered during its development to over 1,500 preschool children throughout the United States and in its current 75-item form yields scores on five factors that seem reasonably consistent with the five theoretical components of motivation, which are also represented by units of

the curriculum. The factor scores themselves, each being based on relatively few principal items, are not characterized by substantial reliability; but their identification can be regarded as evidence of content validity of the test.

The Center's principal activities during 1969-70 were to present four curricula--a revised language curriculum, a revised quantitative curriculum, a revised motivation curriculum, and a modification of the cognitive parent curriculum--individually and in pairs in a number of Head Start classes. The particular pairs were designed to permit evaluation of each curriculum individually and in combination with selected others. The language and quantitative groups scored significantly better than nonlanguage groups on post-test assessments when the particular pre-test and a measure of intelligence were used as covariates. Combining the quantitative curriculum with the motivation curriculum produced superior post-test scores compared to the classes exposed to the motivation program without any of the other special curricula. The parent program was seen as a promising adjunct to the two curricular content areas.

The 1970-71 programmatic research described herein involved presentation of six curricular modules to classes of Head Start children: the language curriculum, LA (Adkins, Crowell, et al, 1970); the quantitative curriculum, QU (Adkins, Kelly, et al, 1970); the motivation curriculum, MO (Adkins & Ballif, 1971); an individualized parent program, PA (Adkins, Dunning, et al, 1971); a music curriculum, MU (Adkins, Greenberg, et al, 1971a; 1971b); and a physical activities curricilum, PH (Adkins, Curtis, & Crowell, 1971). These curricula are presented in separate manuals as adjuncts to this report.*

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*Copies of the curricular manuals can be made available at cost as long as the supplies last. A price list will be sent upon request.

In some classes, these curricula were presented individually, whereas in others certain combinations were involved. The exact nature of these combinations, the mnemonics used to identify the classes, and the number of children in each class are shown in Table 1.

The particular curricular modules were associated with four projects, which can be described as follows. In Project A, four curricula--language, quantification, motivation, and parent involvement--were simultaneously presented in the same two Head Start classes. In Project B, a curriculum in motivation was presented to three classes. Project C consisted of the presentation of a music curriculum to three classes, and the combination of a music curriculum with a physical activities curriculum in two other classes. Finally, Project D involved the introduction of a physical activities curriculum in two classes, and the combination in two classes of the physical activities curriculum and the music curriculum noted for Project C. The aim in each project was to produce and assess changes in the children that corresponded to the focus of each curriculum.

The evaluation of project outcomes was generally conducted by contrasting treatment with non-treatment groups with respect to dependent variables related to the focus of each curriculum. The dependent variables were defined in most cases by scores on standardized or newly developed tests administered as pre-tests and post-tests.

The sizes of the samples for which data were collected were attenuated for a variety of reasons, including children's being absent, dropping out of class, and being untestable because of noncooperation. The disposition of the children with respect to most of the tests administered is presented in Table 2. The first row includes the number of children on whom valid test data were obtained on both pre-test and post-test.

Table 1

Curricular Modules and Number of Children by Class

Project	Curricular Modules	Mnemonic	Number of Children Male	Females	Total
A	Combined curricula (language, quantitative motivation, parent)	CC1	11	9	20
		CC2	11	5	16
B	Motivation	MO1	7	7	14
		MO2	8	9	17
		MO3	9	5	14
C	Music	MU1	11	5	16
		MU2	8	8	16
		MU3	6	12	18
D	Physical Activities	PH1	12	6	18
		PH2	12	8	20
	Music, Physical Activities	MUPH1	5	7	12
		MUPH2	7	7	14

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Table 2

Disposition of Subjects at Pre-Test and
Post-Test Summed Across All Classes for Each Major Test

Pre-Test Condition	Post-Test Condition	Tests*							
		GUMP	TEL	MUAT	BAYL	PSI	HSAT	ITPA	WPPSI
OK	OK	141	130	77	55	74	19	24	69
OK	Drop	31	22	17	15	13	3	4	13
OK	Untestable	0	2	4	0	0	0	1	0
OK	Absent	7	1	5	4	0	0	1	1
Untestable	OK	16	9	7	3	3	15	7	7
Untestable	Untestable	2	2	3	3	2	1	0	4
Drop	Drop	4	3	10	2	3	0	0	1
Absent	OK	12	9	9	1	3	0	3	2
Untestable	Drop	2	4	3	2	0	1	0	1
Absent	Drop	3	3	0	0	0	0	0	0
Absent	Absent	0	0	2	0	0	0	0	0
Total		218	185	137	85	98	39	40	98

*For more complete information on all tests, see Chapter II, Instruments. The abbreviations of the tests are as follows: GUMP--Gumpgookies; TEL--Test of Expressive Language; MUAT--Music Achievement Test; BAYL--Bayley Scale of Motor Development; PSI--Preschool Inventory; HSAT--Head Start Arithmetic Test; ITPA--Illinois Test of Psycholinguistic Abilities; WPPSI--Wechsler Preschool and Primary Scale of Intelligence.

None of the children in any of the other rows were included in the data subjected to statistical analyses; i.e., no analyses were conducted with missing data. It is noteworthy, however, that there were far fewer untestable children for post-tests relative to those who were untestable for pre-tests.

CHAPTER II

THE INSTRUMENTS

Specific Tests

Each child was given several tests to assess the effectiveness of the curriculum presented to him. The Center staff administered certain tests to selected groups in the early fall and again in late spring, except, as indicated, where only a post-test was administered. The instruments used are described below.

A. Wechsler Preschool and Primary Scale of Intelligence (WPPSI)

The WPPSI is a standardized test of general ability specially designed for 4- to 6-year-old children (Wechsler, 1963). It consists of a battery of subtests that may be considered separately as measuring different abilities or that may be combined into performance and verbal scales. The composite score, the intelligence quotient (IQ), is thought to be a measure of overall intellectual capacity. The IQ expresses a child's mental growth relative to that of children of his own age from a representative national sample. An IQ score between 90 and 109 is considered average and indicates that the child is developing at a normal rate. An IQ between 80 and 89 reflects low average ability, so that performance in this range parallels that of children several months younger. Scores below 80 clearly indicate that a child is not developing so rapidly as the average child of his age. Scores of 110 to 119 are earned by children of slightly more than average ability. A small percentage of all children achieve an IQ of 120 or higher; these are children whose intellectual development is markedly accelerated.

B. Test of Expressive Language (TEL), (Appendix A)

The TEL is a short, easily administered instrument for evaluating the level of expressive language of a young child that was developed at the University of Hawaii (Crowell, Fargo, & Noyes, 1969). Using a number of familiar objects from the home and school environment, the test requires the child to respond verbally to a series of graded questions about himself, his immediate environment, and his community (e.g., "What's this?", "What do you do with a pencil?").

The results are reported in terms of age-normed Z-scores with a mean of 100 and a standard deviation of 15. The Z-scores are based on the total score on the 75-item test and are derived from the regression of raw scores upon chronological age.

C. Gumpgookies (GUMP)

This test, which also was developed at the University of Hawaii, is designed to measure motivation to achieve in school. It involves simple figures, called gumpgookies, presented in a variety of situations that are related to school achievement. Each of 75 items consists of two gumpgookies responding to a situation in different ways that presumably reflect motivation to achieve. The examiner reads the captions associated with each pair of figures, and the child is asked to choose his gumpgookie, i.e., the one most like him. The total score on the test is the number of times the child chooses the gumpgookie whose behavior reflects achievement motivation. The results are reported in age-normed Z-scores with a mean of 100 and a standard deviation of 15. As with the TEL, the Z-scores for the total score are based on the full test and are derived from the regression of raw scores upon chronological age (Adkins & Payne, 1971).

Further, the results are reported in terms of five age-normed factor scores that are independent of response sets. The five factors correspond roughly to the five theoretically derived units of the motivation curriculum and can be summarized as follows: affective responses, or work enjoyment; conceptual responses, or self-confidence; purposive responses, or responses to future goals; instrumental activity, or knowing and taking effective instrumental steps; and evaluative responses, or the ability to evaluate one's own performance coupled with the confidence that the evaluation will be high (Adkins & Ballif, 1970b; Adkins & Espinosa, 1971a).

D. Illinois Test of Psycholinguistic Abilities (ITPA)

The ITPA is a comprehensive test of language skills designed for children between the ages of two and 10 (Kirk, McCarthy, & Kirk, 1968). Four subtests of the 1968 revision of the test were selected as being relevant to the language curriculum. A brief description of each of these subtests follows.

1. Auditory Association. This is a test of the child's ability to relate concepts presented orally. It employs the opposite analogy technique, with the examiner reading one sentence followed by an incomplete sentence that the child is to complete appropriately (e.g., "A daddy is big, a baby is _____.").

2. Visual Association. The child is presented with a single stimulus picture surrounded by four optional pictures. For example, a picture of a bone might be surrounded by a pipe, a toy, a pencil, and a dog. The examiner points to the stimulus picture and asks, "What goes with this?". The child is to point to the picture most closely related to the stimulus picture, in this case the dog that belongs to the bone.

3. Verbal Expression. The purpose of this test is to assess the ability of the child to express his own concepts verbally. He is shown four familiar objects, e.g., a button, one at a time, and is instructed: "Tell me all about this." The score is the number of discrete, relevant, and approximately factual concepts expressed. The categories of concepts that might be scored include such things as label, color, shape, and function.

4. Grammatic Closure. This test taps the child's ability to respond automatically to common verbal expressions of standard American speech. For each item the examiner reads a complete statement followed by an incomplete statement to be finished by the child. The examiner points to the appropriate picture as he reads; for example, "Here is a dog. Here are two _____." The correct answer is "dogs."

The raw scores for each of these subtests were converted to scaled or standard scores on the basis of the child's age. In addition, these scaled scores were combined into a sum of scaled scores for the ITPA.

E. Head Start Arithmetic Test (HSAT)

This is an experimental edition of a test also developed at the University of Hawaii to measure various quantitative concepts in young children. A variety of items is included to tap the child's ability in the following areas: counting and number concepts, recognition of numbers, simple computations, and language of numeric information. These four areas are treated separately as subscales in the analysis of results. Some of the items are presented orally and require a verbal response from the child (e.g., "Show me how high you can count."), while others are presented visually and may or may not require a verbal response (e.g., "Count how many stars are on this page." and "Point to the ball that is one-half black.").

Also, some items

The raw score consists of the number of correct responses on 92 items. Age-normed Z-scores with a mean of 100 and a standard deviation of 15 are used in the analysis of the data.

F. Parent Interview

A parent interview form developed and used in 1969-70 was substantially abbreviated and in large part replaced by two formal testing situations. The interview items used in the current study were confined to demographic information, because the additional information collected in the preceding year did not differentiate the treatment groups (Adkins & Espinosa, 1971a). The two new assessment situations were constructed in an effort to evaluate changes in maternal attitudes and maternal teaching style.

The Maternal Attitude Instrument (MAI) was designed to identify the mother's attitude toward general child-rearing practices. Situations depicted in pictures and a structured interview were intended to elicit comments from the mother regarding practices related to the following areas: teaching role, self-concept, sensitivity awareness, reinforcement, discipline, and motivation. Six pictures were suggested by some included in My Schoolbook of Picture Stories (Mill, 1967) as probably being related to these areas of child rearing, and interview questions were devised for each picture in which the parent was asked to interpret the picture in terms of her relationship with her own child. For example, a picture of a birthday party was chosen to stimulate responses indicating whether or not the mother had any idea of the importance of the self-concept. The mother was asked to designate how she felt about having a birthday party for her own child. The mother's responses were recorded verbatim on the interview form (Appendix B).

The Teaching Ability Instrument (TAI) was designed to identify the ability of the mother to communicate to her own child the solution to a simple matching problem. The mother was presented with a 5" x 8" card on which were depicted three two-dimensional objects in a predetermined patterned sequence and was requested not to show the sequence to the child. The child was presented with a blank card of the same size and with three objects that matched in color, shape, and size the objects on the mother's card. The mother's task was to communicate to her child, either by verbal or physical instructions, the sequence in which he was to place the objects upon his card to match the sequence on her card. She could rely heavily on pointing in giving instructions if she wished; but the child was dependent upon her instructions, however expressed, to produce his response, since he could not see the card he was to reproduce. A maximum of two minutes per card was allowed, and there were six cards. However, procedures developed to produce measures of teaching effectiveness, maternal attitude, and child behavior yielded scores of insufficient interobservor reliability to be used in the analyses.

G. Adkins-Ballif Rating Scale (ABRT), (Appendix C)

The Adkins-Ballif Rating Scale was designed to reflect the teacher's impression of the extent to which children possessed behaviors that were relevant to the motivation curriculum (Adkins & Espinosa, 1971a; 1971b). The scale is completed only at the end of the year and consists of 15 items in the form of statements, such as "Is enthusiastic about school," "Lacks confidence in own ability," and "Asks reasons for things."

Each item was intended to fall into one of five scales, which obviously were very brief, corresponding to the five general areas of the curriculum--affective, conceptual, purposive, instrumental, and

evaluative. The teacher rated each child on each item by assigning one of four categories, ranging from "Very much like" to "Not at all like." These ratings were then translated into scores from one to four, with one representing the least motivated behavior and four the most. A total score and a score for each of the five scales were obtained.

H. Zigler Rating Scale (ZIRS), (Appendix D)

The Zigler Rating Scale was adapted from the O.E.O. Behavior Inventory as a general measure of motivation (Adkins & Espinosa, 1971a; 1971b). The scale, administered only at the end of the year, consists of 12 selected items that the teacher rates from "Very much like" to "Not at all like" for each child. Examples of the items are "Easily distracted by things around him" and "Demonstrates imaginativeness and creativity in his use of toys and play materials." Total scores were obtained by converting teacher ratings into scores of from one to four and adding them for all items. A higher score indicates more motivated behavior and a lower score indicates less motivated behavior.

I. Bayley Scale of Motor Development (BAYL), (Appendix E)

The Bayley Scale of Motor Development is designed to assess the physical development of children between the ages of four and six years (Bayley, undated). The child is requested to perform a number of tasks requiring various physical-motor skills, e.g., walking on tiptoes, walking on a narrow board without falling off, walking up and down steps, jumping and reaching, catching a tennis ball, and throwing a tennis ball through a hoop. The test is administered individually, and the skills requested of the child are demonstrated with accompanying verbal instructions. Each child is expected to perform only those activities that in his own judgment he can master. There is no time limit.

Two scores are reported on the Bayley, a raw score and an age-normed deviation score. The raw score is determined by adding up the points obtained on the various skills, each of which has been assigned a point value according to its difficulty in the normative sample. The age-normed deviation score is obtained by converting the child's raw score into a deviation from the mean score for children of his age. The norms for these data were obtained from the test manual (Bayley, undated).

J. The Preschool Inventory (PSI)

The Preschool Inventory (Caldwell, 1968) was designed to provide a general index of knowledge that would be expected of children entering kindergarten. The test items consist of questions as well as commands in which a verbal response, physical performance, or manipulation of objects is required of the child. Specific questions pertain to knowing parts of the body ("What is this?", pointing to body part), counting small numbers of objects, naming colors, understanding prepositions ("in," "under," etc.), knowing general information ("If you wanted to find a lion, where would you look?"), identifying numbers on objects ("How many wheels does a car have?"), placing objects in a "row," comparing quantities, and drawing simple figures.

Scores on the Preschool Inventory are obtained by summing one point for each correct answer on 64 items. Age-normed Z-scores with a mean of 100 and a standard deviation of 15 are used in the analysis of the data (Herman & Adkins, 1970).

K. Music Achievement Test (MUAT), (Appendix F)

The Music Achievement Test is an experimental edition of a test that was originally developed at the University of Hawaii in the summer of 1970.

It is designed to identify understanding of musical concepts in children of preschool age and is individually administered. It yields a total score for 30 items as well as subscores for (a) tones in the environment, (b) expressive elements, (c) rhythm, and (d) melody.

The testing equipment includes a cassette tape recorder and a series of pictures to identify "who or what was making the music." The child is also asked to play some instruments to the beat of the music and to play a simple tune for the examiner.

Total raw scores and raw scores on each of the subtests are recorded. Age-normed scores have not yet been developed, since the test is still in preliminary form and has been given to only a small number of children.

Scheme for Referring to Variables

Due to the necessity of referring to test scores throughout the report and the desirability of conserving space, a system has been developed for coding variable names that is compact and easy to understand and remember. This plan has obvious advantages over merely numbering the variables and providing an index for them, because it avoids the need for bothersome cross-referencing.

Each variable name is composed of three parts:

1. Four letters identifying the test that closely resemble the original name and thus serve as a mnemonic.
2. Two characters, the first of which identifies the score as a subtest (S) or a factor (F), and the second of which identifies the number of the subtest or factor. The letters TT stand for total score.
3. Finally, a one-digit number identifies the time of testing,

with 1 indicating pre-test and 2 post-test.

Examples of the variable names are included in what follows:

WPPSVE1	WPPSI, Verbal Scale, pre-test
WPPSVE2	WPPSI, Verbal Scale, post-test
WPPSPE1	WPPSI, Performance Scale, pre-test
WPPSTT2	WPPSI, Total Score, post-test
TTELTT1	Test of Expressive Language, Total Score, pre-test
GUMPF11	Gumpgookies, Factor 1, pre-test
GUMPTT2	Gumpgookies, Total Score, post-test
ITPAAA1	ITPA, Auditory Association, pre-test
ITPAVE1	ITPA, Verbal Expression, pre-test
ITPAVA1	ITPA, Visual Association, pre-test
ITPAGC1	ITPA, Grammatic Closure, pre-test
ITPATT1	ITPA, Total Score, pre-test
HSATNC1	Head Start Arithmetic Test, Number Concepts, pre-test
HSATNI2	Head Start Arithmetic Test, Numeric Information, post-test
MMAITR1	Maternal Attitude Instrument, Teaching Role, pre-test
MMAISC1	Maternal Attitude Instrument, Self-concept, pre-test
MMAISA1	Maternal Attitude Instrument, Sensitivity Awareness, pre-test
MMAIRF1	Maternal Attitude Instrument, Reinforcement, pre-test
MMAIDS1	Maternal Attitude Instrument, Discipline, pre-test
MMAIMO1	Maternal Attitude Instrument, Motivation, pre-test
ABRTS12	Adkins-Ballif Rating Scale, Subscale 1, post-test
ABRTS52	Adkins-Ballif Rating Scale, Subscale 5, post-test
ABRTTT1	Adkins-Ballif Rating Scale, Total Score, pre-test
ZIRSTT1	Zigler Rating Scale, Total Score, pre-test

BAYLRS1	Bayley Scale of Motor Development, Raw Score, pre-test
BAYLDS1	Bayley Scale of Motor Development, Deviation Score, pre-test
PRSITT1	Preschool Inventory, Total Score, pre-test
MUATTE1	Music Achievement Test, Tones in Environment, pre-test
MUATEE1	Music Achievement Test, Expressive Elements, pre-test
MUATRH1	Music Achievement Test, Rhythm, pre-test
MUATME1	Music Achievement Test, Melody, pre-test

CHAPTER III

PROJECT A: EVALUATION OF A COMBINATION OF FOUR CURRICULAR MODULES

Procedures

In two Head Start classes, both at the Palolo Community Action Program Preschool, four curricular modules that the Center has been developing over several years were presented: the language, mathematics, motivation, and individual parent programs. The background for the motivation curriculum is treated later in more detail in connection with Project B.

The Center has in the past used or supervised the use of these four curricula singly or in pairs and has found significant gains on standardized or specially constructed tests in comparisons with groups not exposed to the curricula, particularly with the language and mathematics programs (Adkins & Espinosa, 1971a). The rationale for combining these four curricular modules for joint presentation to classes was that research in education of the disadvantaged suggests that efforts in the instructional area should be comprehensive and should be combined with a parent program if gains in academic achievement are to be sustained beyond the first year of regular school experience (e.g., Spiker, 1969).

The combined curricula (CC) were presented in two classes, CC1 and CC2. To implement the four programs, three experienced Head Start teachers from the Center staff worked closely with the two regular classroom teachers. In one class, a Center staff member taught the language curriculum, the regular teacher conducted the quantitative sessions, and a Center staff aide taught the motivation program. In the other class, a Center staff member taught the quantitative curriculum, whereas the

regular teacher taught language and a Center staff aide taught the motivation program.

The classes were each divided into three small groups to which separate curricular modules in language, mathematics, and motivation were taught in a rotation system, as described in the Language for Preschool manual (Adkins, D. C., Crowell, D. C., et al, 1970). Language and mathematics were taught during two successive 20-minute periods. Either motivation or a set of language-strengthening and mathematics-strengthening activities was taught during a third 20-minute period, depending upon the nature of the motivation activity for that day. Tangible rewards were used in both classes for the instruction of language and mathematics. Consumables were used early in the training but were quickly replaced with a token system as soon as the children acquired sufficient ability to delay gratification. Backup rewards for the token system consisted of objects regularly used in a classroom, such as pencils and pads.

The parent program was conducted by the two Center staff teachers who taught the language and mathematics programs and by one additional Center staff member. The mothers of both classes were randomly assigned to be trained by one of these three staff members. Each staff member met each of her assigned parents once a week to discuss the child's activities and progress in the instructional program and to train the parents in the use of curriculum-strengthening activities and games they could play with their children. The design and preparation of materials for these activities was a responsibility of the Center staff members.

Weekly meetings attended by the Center staff were held to coordinate plans for the following week and to discuss any problems that had been encountered during the previous week. Daily contact was maintained with

the regular teachers to keep the curriculum-strengthening home activities contenporary with the curriculum taught in the classroom.

Samples: CC1 and CC2

Children in the two classes having the combined curricula were largely from a part-Hawaiian population and resided in a low-income housing development. Children whose parents met the criteria for the low-income housing were considered eligible for attendance in the Head Start Center, which is located nearby. There were 20 children in each of the classes.

The two classes, affiliated with the Community Action Program, were located in a building provided by a church. The building consisted of several rooms surrounding a large, open room that was often used to combine the two classes for large-group activities. Each classroom was quite spacious and could be divided into functional units for small-group activities. The classrooms were lined with shelves for toys, books, and blocks, and there were bulletin boards, chalkboards, and many large windows. A grassy area with slides and swings and a large asphalt parking lot for riding bicycles provided ample space for outdoor activities. Rest-rooms, a small kitchen, and an office were all in a single building with the classrooms.

Results and Conclusions

Individual Curriculum Effects

The experimental designs in this report typically involve contrasts between a treatment group and a comparison group. In none of the analyses were children randomly assigned to these groups. Although obviously preferable for statistical control, as is so frequently the case in this type of research, random assignment to groups did not prove feasible for practical reasons. Since in no instance could the Center participate in

the selection procedures for different classes, the opportunity for random assignment to treatment or nontreatment groups was not present. And in no instance was the Center capable of transporting children from one area of the city to another, thus preventing random assignment of children to different treatment groups. Also, assignment of treatment conditions to classes depended heavily on the interests and capabilities of the particular teachers and hence was in no sense random.

The comparison groups used in the analyses were alternative treatment groups which were presented a curricular module that was supposedly unrelated to the module designed to affect the dependent variables. Some improvement in the comparison groups used in the analyses may have occurred, even though the curricular module presented to them would not have been expected to produce substantial gains on these dependent variables. This improvement on dependent variables seemingly unrelated to content of a specific curricular module may occur throughout the comparisons made in the analyses of these and all subsequent data because of the particular emphases teachers place upon specific content areas throughout the school year. It is impossible to control these idiosyncratic emphases and probably unwise to urge a teacher not to explore a curriculum area of interest to her.

The purpose of the analyses conducted on the scores obtained in the combined curriculum (CC) classes was to determine the effects of presenting four curricular modules to representative groups of Head Start children. Of particular interest was the determination of effects in the areas of focus for each curriculum. For example, the combined curricula would be expected to produce gains in the general area of performance on the intelligence measure (WPPSFS), and particularly on the verbal intelligence

measure (WPPSVE) and on verbal achievement (ITPA, TEL, PSI). The combined curricula would also be expected to produce gains in specific arithmetic achievement (HSAT) and in the area of motivation to achieve in school (GUMP). The parent program would be expected to give support to the language and quantitative curricula, since it was primarily for these areas that the home activities conducted by the parents were designed.

The methods of evaluating the combined curricular effects in language generally consisted of analyses of covariance, with the pre-tests as covariates and the post-tests as dependent variables. These covariance analyses were applied to the scores obtained on the WPPSI, TEL, and PSI. The comparison groups in each analysis consisted of classes that had been presented a curriculum that would not be particularly expected to produce significant gains on these dependent variables, with age controlled, or in comparison with other groups exposed to different treatments.

The analyses of covariance on variables presumably related to the language curriculum are presented in Table 3. Scores are presented for Group CC, the treatment group, and the motivation (MO) group, the comparison group. Although Group MO had been presented the motivation curriculum and an otherwise traditional, relatively unstructured preschool curriculum, smaller gains would be expected in the area of language from either of these curricula. However, to the extent that the motivation curriculum does indeed foster motivation to achieve in school, it would be expected to have some effect on actual achievement in school subjects such as language or mathematics. Nevertheless, the hypothesis was that the effects of the motivation curriculum on measures of linguistic ability or of specific language achievement would be less than the effects of a curriculum geared directly to development of language skills.

Table 3

Analyses of Covariance Comparing
Group CC vs. MO on Dependent Variables Related to Language

			Mean Scores					
Variable	Group	N	Covariate (Pre-test)	Post-test	Adjusted Post-test	df	F	p
WPPSVE	CC	32	76.41	85.31	84.45	1,66	7.27	<.01
	MO	37	74.57	78.43	79.18			
WPPSPE	CC	32	88.25	101.44	101.55	1,66	5.54	<.02
	MO	37	88.54	96.86	96.77			
WPPSFS	CC	32	80.25	92.38	91.90	1,66	9.83	<.01
	MO	37	79.27	86.03	86.44			
PRSITT	CC	33	97.70	124.06	124.62	1,71	34.93	<.01
	MO	41	98.95	107.12	106.68			
TTELTT	CC	30	97.97	114.33		1,75	23.49*	<.01
	MO	45	95.47	100.72				

* The group slopes in the analysis of covariance were significantly different for this comparison. The *F* reported here is the interaction effect for an analysis of variance with two independent groups (CC vs. MO) and two trials (pre-test vs. post-test).

The dependent variables presented in the analysis are the WPPSI verbal, performance, and full-scale IQs; the PSI total age-normed Z-score; and the TEL total age-normed Z-score. Significant differences were found on the adjusted post-test mean scores for all comparisons at less than the .01 level of significance, except on the WPPSI performance measure, for which the comparison was significant at less than the .02 level (but not at less than the .01 level). The assumption of parallel slopes was not fulfilled in the covariance analysis of the TEL total score; thus, the *F* reported in Table 2 for the TEL is the interaction term for a factorial analysis of variance with two groups (CC vs. MO) and two trials (pre-test vs. post-test).

Although smaller gains were expected in IQ and in verbal achievement for Group MO as compared with Group CC, Table 3 shows that the verbal scores of the MO group did indeed increase consistently between pre-test and post-test. The significance of these gains was not tested, and the gains are not so large as those of Group CC; but the gains are nevertheless of sufficient magnitude to warrant further discussion. The increases in scores for Group MO are consistent with the secondary goals of the motivation curriculum. Although these gains could have resulted from other activities taking place in the classrooms, these findings are suggestive and may profitably be explored in future investigations.

An inspection of the WPPSI mean pre-test IQ scores in Table 3 reveals that the Hawaiian Head Start groups tested scored very much below the mean IQ of the normative sample. Furthermore, the mean WPPSI Full-Scale IQ is about five points below the score obtained in prior years by

Hawaiian Head Start children on the Stanford-Binet (e.g., Adkins & Ballif, 1970a). This discrepancy between WPPSI and Binet scores probably arises from differences in the groups on which the tests were normed rather than true differences between groups tested in successive years. The norming of the Binet took place in an era of social-emotional emphasis in preschool education, whereas the norming of the WPPSI took place during the early 1960s, an era when preschools for middle-class children were beginning to urge content curricula and when parents were concerned about the Sputnik crisis in education. No doubt these changing emphases in education and parent concern have contributed to the development of a group of middle-class children of greater sophistication and knowledge. Since compensatory education had not yet received the thrust of the Elementary and Secondary Education Act, however, it seems reasonable to assume that children of lower socio-economic status were still comparable in cognitive skills to their earlier peers. This relative superiority of middle-class children in the WPPSI norm groups over those in the Binet norm groups, coupled with the relative similarity of children from homes of a lower socio-economic level, may account for the lower IQs found on the WPPSI than on the Binet for the Hawaiian Head Start children (Wechsler, personal communication, 1971).

The analyses of the combined curriculum effects in the language area in terms of WPPSI, PSI, and TEL scores were supplemented by an analysis in terms of ITPA scores. Rather than an analysis of covariance, however, the ITPA scaled scores were submitted to a simple analysis of variance with repeated measures, since no data had been collected from a comparison group. The simple analyses of variance on ITPA subtest scores for auditory association, visual analogies, verbal expression, grammatic closure, and

total score (sum of scaled scores) are presented in Table 4. Significant gains from pre-test to post-test were found for all comparisons at less than the .01 level of significance, except for the grammatic closure test of the ITPA. It should be kept in mind that these comparisons are based upon age-normed scores, so that the significant differences found are not attributable simply to increases in the mean ages of the samples.

The combined curricula generally were effective in producing gains in intelligence measures and in verbal achievement. The evidence for these gains was found from comparisons of the treatment group with other groups (not randomly assigned control groups in the strictest sense) and by comparisons from pre-test to post-test on age-normed measures. The specific exception to this overall intervention effect in the language area was for the ITPA grammatic closure subtest, as noted above. These results are generally consistent with findings of prior years (Adkins & Espinosa, 1971a), thereby confirming the expectation that the combination of language with other curricula would produce substantial improvements in the language area.

The analyses to determine the effects of the combined curriculum on quantitative achievement consisted of a simple analysis of variance of the age-normed Z-scores for the HSAT subtest and total scores. Subtest age-normed Z-scores available on the HSAT are in the areas of counting and number concepts, recognition of numbers, simple computations, and language of numeric information. The total score is the sum of the raw scores on the subtests and is expressed as an age-normed Z-score, as are the scores on the subtests. The simple analyses of variance of the subtest and total Z-scores are presented in Table 5. These results indicated that the combined curriculum treatment condition again produced significant gains

Table 4

Simple Analyses of Variance (Pre-Test vs. Post-Test) on ITPA Scaled Subscores and Total Scores (Sum of Scaled Scores) for Group CC (N = 24)

	Mean Scores				
Variable	Pre-Test	Post-Test	df	F	p
ITPATT	113.33	133.21	1,23	28.64	<.01
ITPAAA	29.58	37.00	1,23	30.31	<.01
ITPAVA	28.33	32.79	1,23	6.86	<.05
ITPAVE	29.83	37.08	1,23	20.78	<.01
ITPAGC	25.08	26.33	1,23	.81	n.s.

Table 5

Simple Analyses of Variance (Pre-Test vs. Post-Test) on HSAT Age-Normed Subscale Z-Scores and Total Z-Score for Group CC (N = 19)

Variable	Mean Scores		df	F	p
	Pre-Test	Post-Test			
HSATS1	93.68	118.95	1,18	108.07	< .01
HSATS2	99.68	143.21	1,18	38.44	< .01
HSATS3	95.00	111.84	1,18	15.47	< .01
HSATS4	97.05	115.79	1,18	26.43	< .01
HSATTT	94.74	124.79	1,18	81.45	< .01

at less than the .01 level of significance on all of the subtests of the HSAT and on the total score.

The general impression of significant improvement in areas related to quantitative skills as a result of combined curricular effects is consistent with previous investigations of the effects produced directly by the quantitative curriculum (Adkins & Espinosa, 1971a). This curriculum has been extremely impressive in increasing quantitative achievement even when used with no other special intervention program.

The combined curricular effects in the area of motivation were evaluated by comparing Group CC with a group that had not experienced the motivation curriculum. Group CC was contrasted for this purpose with Group MU, a group to which the University of Hawaii Music for Preschool curriculum had been presented. The Gumpgookies, an objective-projective test of motivation to achieve in school designed for preschool children, was used to identify differences between the groups. The Gumpgookies yields a total score and five factor scores that correspond roughly to the five units of the motivation curriculum, each of which is expressed as an age-normed Z-score. The weights for determining the factor scores were based on Horst's procedure for arriving at factor scores that are uncorrelated with response set scores, applied to 1588 cases (Horst, 1971). The factor scores that result from a relatively brief, 75-item test, are recognized as being of fairly low reliability, the KR-20 estimates ranging from .35 to .55 (Adkins & Ballif, 1970c). Nevertheless, it was thought that their analysis might at least be suggestive.

Analyses of covariance comparing Groups CC and MU were made for each of the Gumpgookies age-normed factor scores and the total score. The pre-test was used as the covariate in each comparison, and the post-test

was used as the dependent variable. The results of these analyses are presented in Table 6. On only one of the five factors--Factor 3, Planning--was a significant difference found between Groups CC and MU in the predicted direction. On the other factors and the total score, differences between adjusted post-test means were nonsignificant. In some cases, as with Factor 1, the post-test score was lower than the pre-test score for both groups.

The evaluation of motivation effects resulting from curriculum intervention has presented difficulties in previous analyses, as reported by Adkins and Espinosa (1971a), and continues in the present analysis as an unresolved problem of substantial magnitude. To report that the Gumpgookies, even though it was designed specifically to assess motivation, does not show differences between groups to which a specific motivation curriculum has been presented and non-randomly assigned comparison groups is not to say that the curriculum is ineffective. The nonsignificant differences between treatment and comparison groups may directly question the validity of the test for the purpose for which it was used, the effectiveness of the particular curriculum in producing changes in attitude and behavior in preschool children, or both.

Given the available data, there is no firm foundation upon which to determine whether the curriculum, the test, or both should be reviewed and modified. The curriculum is currently under revision to lend greater clarity and impact to the content. The test itself could be substantially revised in later editions if resources for such efforts become available. Anecdotal comments by some test administrators have suggested that the test format might well be modified. Some administrators have expressed the opinion that the 75 two-choice items on the test

Table 6

Analyses of Covariance Comparing Group CC (N = 28) vs. MU (N = 44) on Dependent Variables Related to Motivation

Variable	Group	Mean Scores: Covariate (Pre-Test)	Mean Scores: Post-Test	Mean Scores: Adjusted Post-Test	df	F	p
GUMPF1	CC	105.32	98.00	98.12	1,69	.49	n.s.
	MU	98.00	95.25	95.17			
GUMPF2	CC	96.93	99.32	99.30	1,69	.17	n.s.
	MU	99.23	97.98	97.99			
GUMPF3	CC	93.18	102.46	102.35	1,69	4.64	<.03
	MU	92.16	95.55	95.62			
GUMPF4	CC	103.16	100.41	104.73	1,69	.78	n.s.
	MU	99.99	102.97	101.85			
GUMPF5	CC	92.82	103.07	103.05	1,69	.51	n.s.
	MU	92.20	101.09	101.10			
GUMPTT	CC	95.50	99.50	98.75	1,69	1.36	n.s.
	MU	90.25	94.32	94.80			

may be too demanding of the attention of children in the age range of interest in Head Start classes. Other testers, perhaps more sympathetic with the orientation of the instrument, do not share this opinion. True, some children do make an occasional blind or impulsive choice. Although this seems to happen infrequently, the incidence may be high enough to obscure any of the valid information yielded by the test. It may be argued, however, that the attentional prerequisites for responding to two-choice discriminations are important components of motivation to achieve. Boredom on the part of the child or on the part of some examiners as well as the troublesome accompanying effects of response sets--a problem on which some headway has been made--continue to obfuscate results.

The parent program in the combined curriculum classes, designed primarily to strengthen the language and mathematics curricula, was evaluated primarily by inspection of the attendance of parents in the classes and by review of the results on an instrument designed to reflect maternal attitude and practices of child rearing. The attendance data were considered critical, since in prior experience with Head Start mothers in Hawaii the major difficulty in parent contact was in achieving the participation of the full group (Adkins & Espinosa, 1971a). Maternal attitude in regard to practices of child raring was assessed by means of a new Maternal Attitude Instrument (MAI). This instrument was locally developed during the past year for specific evaluation of the parent program.

Since the attendance of parents previously had been a problem, the three parent workers in the past year's program met individually at the home of the parent of each child or at the school itself. This attempt to guarantee attendance is reflected in the data collected by the parent

workers on the percentage of meetings successfully arranged out of the total number on a weekly schedule. The total number of possible meetings was 21, one activity having been presented to the parent at each meeting. The activity was designed to strengthen either the language or the mathematics curriculum at a level of difficulty appropriate to the child's progress.

Data relevant to the incidence of parent attendance and activity completion are presented in Table 7. The first parent worker, I, maintained a very high rate of parent attendance and activities completed. The second worker's rate of parent attendance was detrimentally affected by one parent who moved but who subsequently returned to the program, by parent illness, by employment schedules of parents, and by their other responsibilities. Three mothers were not included among these data for worker II, because their children began attending the Head Start classes during December. In spite of an attendance record that was detrimentally affected by a variety of unexpected contingencies, parent worker II was able to maintain a schedule of completed activities that approached 100% by presenting activities from missed meetings at subsequent meetings. Parent worker III's schedule of meeting completions approached a very high level for all parents. The objective of establishing and maintaining contacts was attained, as indicated by these data and by the overall range of attendance, 11-20, and activity completion, 16-21.

The MAI was administered to assess parents' attitudes about practices of child rearing. The focus of the instrument is upon the mother's attitudes with respect to her role as a teacher, her sensitivity towards the child's feelings, her method of motivation, her method of reinforcement, and her concept of the child's self-image. The parent workers had

Table 7

Attendance and Activity Completion
Rates for Parent Workers in Group CC

Parent Worker	Number of Parents	Attendance			Activities		
		Number of Meetings	Mean no. of Meetings	Per cent of Total	Number Completed	Mean no. Completed	Per cent Completed
I	13	224	17.23	82	263	20.23	96
II	12	192	16.00	76	237	19.75	94
III	11	217	19.73	94	213	19.36	92

attempted in their weekly contacts with the mothers to influence them specifically in the areas assessed by the MAI. A high total score reflected a positive direction for all of these elements of maternal attitude. Data on the MAI were collected from each mother by the parent workers at the pre-test and the post-test periods. Responses were recorded verbatim and scored independently by four judges who had been instructed on the criteria for the scoring categories (Appendix B).

The mean total score and mean item responses at pre-test and post-test times were subjected to *t*-tests for correlated means. These data are reported in Table 8. The increase in mean total score from pre-test to post-test was significant and was accompanied by increases for each item on the test. Significant increases on the individual items were found for selected items pertaining to motivation, teaching role, and child's self-concept.

The parent workers maintained a record of spontaneous comments offered by the parents about their participation in the program. The parents' reactions were extremely favorable and supportive of the program. The parents not only felt that their children had profited from the activities they had engaged in together, but that they themselves had profited as well. Comments suggesting a vertical diffusion effect (Klaus & Gray, 1968), in which the Head Start child taught his newly acquired skills to younger children in the family, were also reported.

Some of the specific reactions noted by the parent workers were as follows:

> Sometimes the child came into the conference with his mother. This seemed especially rewarding to both the mother and the child, particularly when the child would win the game.

Table 8

Tests of Significance for Item Responses
and Total Score on the MAI in Group CC (N = 34)

Item	Variable	Mean Scores Pre-Test	Mean Scores Post-Test	df	t	p
1	Teaching role	2.70	3.11	32	1.69	n.s.
2	Sensitivity	2.74	3.14	33	1.82	n.s.
3	Motivation	2.39	3.51	26	3.36	<.01
4	Teaching role	3.06	3.68	33	2.86	<.01
5	Teaching role	3.88	4.11	30	1.47	n.s.
6	Teaching role	3.68	4.26	33	2.59	<.05
7	Motivation	2.80	3.57	33	3.21	<.01
8	Motivation	1.83	2.51	33	3.45	<.01
9	Reinforcement	2.67	3.00	28	1.76	n.s.
10	Child's self-concept	3.17	3.68	33	2.55	<.05
11	Sensitivity	3.60	3.66	33	.25	n.s.
12	Teaching role	2.31	3.30	31	5.35	<.01
	Total	33.57	41.28	33	6.59	<.01

When the mother saw examples of her child's current work, she was surprised to learn that he could make "that kind of thing" (shapes, etc.).

A mother felt that her child was learning so much that she planned to keep the games to review during the summer and further prepare her child for kindergarten.

Mothers often reported that the Head Start child helped his brother or sister.

Many instances were reported of the whole family's being involved in the games.

The general impression of the parent participation program is highly favorable, based upon the attendance records, number of activities completed, results on the MAI, and anecdotal reports by the parents and the parent workers. The aim of developing high attendance rates was readily accomplished by having individual parent workers meet with the parents in their own homes and by providing the parents with a number of interesting activities in which they could participate with their children. Although the parents all reported actually making use of these activities during the week, there was no evaluation of the child's performance to determine if this indeed was the case. The parents in some cases suggested modifications of some games that the child apparently did not seem to enjoy. Revisions of the parent program should incorporate these parent suggestions and should attempt to maintain high attendance with a program that is more economical than one in which three professional workers are visiting individually with some 40 parents. For example, subprofessional employees or trained parents could be engaged for this same purpose.

Combined Curricular Effects.

The curricular combinations presented in the two CC classes were intended to produce maximum benefits in specific areas of academic

accomplishment. The potential benefits were considered to be maximal in that the presentation of a parent program to accompany the language and quantitative curricula would be expected to strengthen the gains produced individually by those curricula; furthermore, the presentation of a motivation curriculum should support the involvement of the children in curricular content areas such as language and quantification.

The combination of curricular modules in the four areas--language, quantitative ability, motivation, and the parent program--was proposed as being potentially more effective than presentation of individual curricula or of pairs of curricula. The extent to which this was true was determined by comparing combined curriculum groups with groups in which individual and paired curricular conditions existed. A number of such individual and paired curricular modules had been presented during 1969-70 to Head Start classes in the Honolulu area (Adkins & Espinosa, 1971a). The 1969-70 individually presented and paired curricula were as follows: language and motivation (LAMO), parent program and motivation (PAMO), quantitative program and motivation (QUMO), motivation alone (MO), parent and quantitative programs (PAQU), language and quantitative programs (LAQU), and the quantitative program alone (QU).

The combined curricula were contrasted with the individual and paired curricula with respect to variables related to measured intelligence (WPPSI), language (ITPA), and quantitative ability (HSAT). Analyses of covariance between groups (LAMO, PAMO, QUMO, MO, PAQU, LAQU, QU, and CC) were conducted on each of these variables, using the pre-test as covariate and the post-test as dependent variable. It was predicted that the greatest adjusted post-test scores would generally occur for the CC group. The purpose of the covariance analysis in this application is less to

establish significance of the differences among the groups, however, than to determine the values of the adjusted post-test means and then place them in rank order. This rank-ordering shows whether Group CC appears in most instances to be the leading group. The superiority of combined curricula should be evident in Group CC's general superiority across a number of comparisons, not necessarily in statistical significance in any one comparison.

The covariance analyses of the WPPSI data contrasting Group CC with the individual and paired curricular groups are presented in Table 9. The differences among the adjusted means of the groups on the WPPSI verbal IQ were significant at less than the .05 level. Groups PAQU, LAQU, and CC were the three groups with the highest adjusted mean scores. The quantitative curriculum is a common element in all of these groups, and the language and parent programs are each present in two of them.

The differences among the adjusted means of the individual, paired, and combined curriculum groups on the WPPSI performance IQ, also presented in Table 9, were significant at less than the .05 level. Groups PAQU, CC, and QUMO had the leading three adjusted mean scores in this analysis.

The WPPSI full-scale IQ covariance analysis on these groups is also presented in Table 9. The differences among the adjusted post-test mean scores were significant at less than the .01 level. The order of the top three groups in the analysis with full-scale IQ was PAQU, CC, and LAQU.

An obvious trend emerged in these data consisting of superiority in WPPSI verbal, performance, and full-scale IQ for Groups PAQU and CC. The particular combination of parent and quantitative programs appears to have had a comparable effect on the IQ measure to that found for the four-curriculum combination. In fact, Group PAQU was superior to the

Table 9

Simple Analyses of Covariance for WPPSI IQ Scores
Contrasting Group CC with Individual and Paired Curricular Groups

Variable	Group		Mean Scores: Covariate (Pre-Test)	Mean Scores: Post-Test	Mean Scores: Adjusted Post-Test	df	F	p
WPPSVE	LAMO	36	79.05	86.19	82.42	7,232	2.28	<.05
	PAMO	24	70.67	77.46	80.18			
	QUMO	29	71.90	81.76	83.53			
	MO	26	74.85	79.35	78.83			
	PAQU	30	76.57	88.67	86.82			
	LAQU	37	70.41	81.95	84.87			
	QU	27	72.52	81.93	83.22			
	CC	32	76.41	85.31	83.59			
WPPSPE	LAMO	36	85.42	94.06	94.39	7,232	2.70	<.05
	PAMO	24	80.25	91.08	95.06			
	QUMO	29	83.79	95.00	96.48			
	MO	26	88.15	94.42	92.82			
	PAQU	30	88.63	103.10	101.16			
	LAQU	37	84.89	95.22	95.92			
	QU	27	87.07	94.70	93.86			
	CC	32	88.25	101.44	99.77			
WPPSFS	LAMO	36	80.31	89.11	87.03	7,232	3.31	<.01
	PAMO	24	72.83	82.46	86.53			
	QUMO	29	75.38	86.90	88.87			
	MO	26	79.38	85.27	83.95			
	PAQU	30	80.60	95.23	92.91			
	LAQU	37	75.08	87.38	89.60			
	QU	27	77.48	86.81	87.06			
	CC	32	80.25	92.38	90.34			

other groups in every comparison. The contribution of the preschool quantitative curriculum to language development has been noted by Adkins and Espinosa (1971a) and explained as the logical product of a curriculum that is based heavily on language despite its manifest emphasis upon quantitative concepts as well.

The analyses of covariance on the ITPA scores for the combined curriculum groups and the individual and paired curriculum groups are presented in Table 10. Although the covariance analysis of the sum of scaled ITPA scores did not reveal significant differences, the three leading groups on the adjusted post-test mean score were Groups CC, LAMO, and QU. The analysis of the auditory association subtest of the ITPA revealed significant differences at less than the .05 level, and the three leading adjusted post-test means were obtained by Groups QUMO, CC, and LAMO. On the visual association subtest, no significant differences were found, and the three leading adjusted post-test means were obtained by Groups QU, PAQU, and LAMO. Group CC was a close fourth in this ranking. Significant differences among the adjusted post-test means on the verbal expression subtest were found at less than the .01 level, and the three leading means were for Groups LAMO, QUMO, and PAQU. Again, Group CC was a close fourth by no more than a few hundredths of a point on the adjusted post-test mean. The analysis of the grammatic closure subtest produced significant differences at less than the .01 level, and the ranking for the adjusted mean scores showed Groups LAMO, PAQU, and CC to be in the first three positions.

On the ranking of ITPA subtest scores, Group CC appeared in the upper three positions on two occasions, and was ranked first on the total score. But Group LAMO appeared in the three top positions four times, and Group

Table 10

Simple Analyses of Covariance for ITPA Subtest and Total (Sum of Subtest) Scale Scores Contrasting Group CC with Individual and Paired Curricular Groups

			Mean Scores					
Variable	Group	N	Covariate (Pre-Test)	Post-Test	Adjusted Post-Test	df	F	p
ITPATT	LAMO	34	119.79	137.62	131.80	7,219	1.56	n.s.
	PAMO	23	106.65	115.91	120.16			
	QUMO	29	108.79	126.31	128.92			
	MO	27	106.74	120.41	124.59			
	PAQU	29	122.41	134.14	126.31			
	LAQU	35	105.57	109.66	114.73			
	QU	27	113.07	130.44	129.77			
	CC	24	113.33	133.21	132.34			
ITPAAA	LAMO	34	31.50	36.65	34.38	7,219	2.59	<.05
	PAMO	23	26.87	29.43	30.79			
	QUMO	29	27.97	35.83	36.33			
	MO	27	27.96	30.85	31.35			
	PAQU	29	30.31	35.14	33.80			
	LAQU	35	26.34	30.86	32.63			
	QU	27	28.00	33.59	34.07			
	CC	24	29.58	37.00	36.24			
ITPAVA	LAMO	34	29.50	33.38	32.71	7,219	1.79	n.s.
	PAMO	23	26.22	30.04	30.75			
	QUMO	29	25.72	28.97	29.88			
	MO	27	26.11	30.74	31.49			
	PAQU	29	31.72	35.28	33.67			
	LAQU	35	26.49	31.40	32.00			
	QU	27	28.37	37.04	36.84			
	CC	24	28.83	32.79	32.40			
ITPAVE	LAMO	34	32.74	42.44	41.53	7,219	3.67	<.01
	PAMO	23	28.87	32.43	33.48			
	QUMO	29	30.34	37.83	38.13			
	MO	27	30.96	34.41	34.40			
	PAQU	29	32.93	38.69	37.68			
	LAQU	35	30.26	35.69	36.03			
	QU	27	30.81	34.78	34.84			
	CC	24	29.83	37.08	37.64			
ITPAGC	LAMO	34	26.06	28.50	28.07	7,219	2.18	<.05
	PAMO	23	24.70	24.00	24.65			
	QUMO	29	24.76	23.69	24.29			
	MO	27	25.04	24.41	24.79			
	PAQU	29	27.45	29.31	27.79			
	LAQU	35	24.91	24.74	25.22			
	QU	27	25.93	25.04	24.72			
	CC	24	25.08	26.33	26.68			

PAQU appeared in these upper ranks three times. Thus, although Group CC ranked relatively well, it could not be claimed that the combined curricula produced any clear advantage for Group CC in all areas on the ITPA.

The final covariance analyses of the data collected on these groups were conducted on the HSAT subtest and total age-normed Z-scores. These data are reported in Table 11. Differences among adjusted post-test means on each subtest and on the total score were significant at less than the .01 level. The three top-ranked groups for the adjusted post-test means on each of the subtests showed Group CC to be ranked first on two occasions and third on two occasions. Group CC appeared as the first-ranked group on the total score. A clear superiority for Group CC thus emerged in the HSAT data.

The relative effects of a massive treatment involving four curricula were hypothesized to be generally greater than those of any intervention with pairs or single curriculum. Post-test means were adjusted for pre-test values on dependent variables related to intelligence, language, and quantification. Although it was true that the combined curriculum group performed reasonably well in these areas, being positioned among the top three of seven ranked groups in almost every comparison, other groups such as PAQU were comparable in many respects to the combined curriculum group. As noted above, the language increments produced by the quantitative curriculum make sense in terms of its content. The parent program with which this curriculum was combined involved regular individual contacts between parent worker and parent that were focused upon curriculum content. The gains produced by these two programs together in the CC group, at least in the cognitive area, may have been sufficient to overshadow any benefits being accrued as a result of their being accompanied by the language and motivation

Table 11

Simple Analyses of Covariance for HSAT Age-Normed
Z-Scores Contrasting Group CC with Individual and Paired Curricular Groups

			Mean Scores					
			Covariate		Adjusted			
Variable	Group	N	(Pre-Test)	Post-Test	Post-Test	df	F	p
HSATNC	LAMO	35	107.83	110.97	106.26	7,224	11.35	<.01
	PAMO	27	98.85	98.26	98.60			
	QUMO	32	99.22	115.13	115.26			
	MO	26	103.69	103.46	101.08			
	PAQU	31	102.97	122.48	120.51			
	LAQU	36	89.44	110.33	115.96			
	QU	27	98.74	111.81	112.21			
	CC	19	93.68	118.95	122.19			
HSATNR	LAMO	35	103.31	119.89	116.24	7,224	13.01	<.01
	PAMO	27	99.52	103.63	103.82			
	QUMO	32	98.75	142.88	143.84			
	MO	26	102.38	104.38	101.68			
	PAQU	31	101.00	149.68	148.37			
	LAQU	36	92.97	124.97	131.77			
	QU	27	101.26	120.85	119.28			
	CC	19	99.68	143.21	143.23			
HSATSC	LAMO	35	108.66	110.97	106.69	7,224	7.28	<.01
	PAMO	27	96.56	98.63	100.00			
	QUMO	32	100.53	113.66	113.17			
	MO	26	102.31	101.54	100.22			
	PAQU	31	102.84	119.71	118.15			
	LAQU	36	92.03	105.14	108.62			
	QU	27	95.81	113.63	115.34			
	CC	19	95.00	111.84	113.93			
HSATNI	LAMO	35	106.80	114.37	109.88	7,224	5.34	<.01
	PAMO	27	95.56	100.48	102.62			
	QUMO	32	99.16	114.31	114.33			
	MO	26	102.12	100.62	98.89			
	PAQU	31	105.32	117.81	114.19			
	LAQU	36	92.67	104.83	108.67			
	QU	27	93.30	105.30	108.77			
	CC	19	97.05	115.79	117.05			
HSATTT	LAMO	35	108.49	116.06	108.26	7,224	19.23	<.01
	PAMO	27	97.07	99.74	101.58			
	QUMO	32	99.31	123.06	123.02			
	MO	26	103.27	103.00	99.61			
	PAQU	31	103.87	130.45	126.56			
	LAQU	36	89.50	112.33	120.57			
	QU	27	96.44	114.81	117.19			
	CC	19	94.74	124.79	128.61			

curricula. The facilitating effect the motivation curriculum may have upon language or quantification thus may be obscured by an effective parent program. Noncognitive gains have never been adequately assessed in the motivation curriculum, however, so it is still difficult to present generalizations about the contribution the motivation curriculum makes to motivational processes.

CHAPTER IV

PROJECT B: EXPLORATION OF METHODS OF TEACHING MOTIVATION TO ACHIEVE TO PRESCHOOL CHILDREN

The Conceptualization of Constituents of Motivation

It has been widely acknowledged that motivation plays a critical role in learning, yet specific attempts to increase motivation for learning in school are practically nonexistent. Most attempts have probably been discouraged because of diversified and incomplete conceptualizations of motivation to achieve in learning and because of a lack of adequate instruments that can be used to measure such motivation, especially in young children. Based upon what appear to be promising explorations in both of these areas, this research was designed to explore further ways to increase the occurrence of those behaviors from which motivation to achieve in learning can be inferred and thus to increase motivation to achieve in learning in school.

As presented in earlier reports, (Adkins & Ballif, 1970a), motivation to achieve in school is hypothesized to be the result of the dynamic interaction of five specific ways of thinking about the self and achievement within the school situation. These ways of thinking are conceptualized as categories of covert responses, which are not unlike overt responses in that they can be evoked by a variety of stimulus patterns as a result of previous learning. Each category consists of a family of responses of which one or another can be aroused by a similar set of cues.

The first constituent hypothesized as contributing to motivation to achieve consists of affective responses, i.e., the child must expect that through achieving in school his existence will become more pleasant. The second constituent of motivation to achieve has been hypothesized as a category of conceptual responses, i.e., the child must see himself as an

achiever in school with his own personal adequacy the determinant of his success. Purposive responses constitute the third hypothetical component of motivation to achieve, i.e., the child must be able both to set up appropriate purposes and to use his purposes to direct his behavior. Closely related to purposive responses are thought to be instrumental responses, i.e., the child must know and be able to perform those steps that will be effective in accomplishing his purposes. Finally, the child must also be able to evaluate the steps he has taken to achieve his purposes, the fifth hypothesized constituent of motivation to achieve in school learning.

This conceptualization of motivation to achieve suggests that these constituents are associations between the identified categories of responses, or approximations to the responses, and stimuli perceived prior to, during, and/or contingent upon the responses. If it were possible to arrange the perceived stimuli so that the probability of the response constituents of motivation to achieve could be increased, the acquisition of motivation to achieve in learning could be demonstrated. The multitude and complexity of stimuli involved, however, complicate attempts to bring them under systematic contiguous association with the responses. Serious endeavors to do so are further complicated by problems in arriving at adequate operational definitions for either the stimuli or the responses in question.

There are scattered suggestions that experiences can be designed through which the response constituents of motivation to achieve can be increased. Affective expectations tend to increase when confirmed, and attitudes toward school can become more positive through shaping.

Expectancy of success seems to increase after succeeding, and self-esteem may be developed through being accepted and having high expectations and goals. Moreover, the observation of appropriate behavioral and verbal models appears to influence the setting of purposes, the initiating of instrumental steps, and processes of evaluation in young observers.

The influence of significant figures as modeling and reinforcing agents recurs as a common theme throughout these suggestive findings. The influence of these figures appears to increase when they continually verbalize their behavior, and it varies according to the characteristics of the figure and the nature of the figure-child relationship. Continued performance of learned responses, however, seems to be dependent upon reinforcement--external, internal, or vicarious. Through extrapolation, then, it appears that the response constituents of motivation to achieve are most likely to be learned when experiences that give rise to the response constituents occur in the presence of significant figures who engage in modeling and reinforcing.

Classroom intervention designed to increase motivation to achieve should expose children to significant figures who think about school in specific ways, manipulate school experiences so that children can learn to respond in the same way, and reinforce this thinking both to shape and maintain the elicited responses. Inasmuch as there are limited numbers of adults in the classroom who can function as significant figures, the responsibility for successfully implementing such a program rests heavily on the teacher. She not only must possess characteristics that will enhance her potency as a model with respect to each of the covert response constituents of motivation to achieve, but also she must develop relationships with her children that will increase her effectiveness as a personal reinforcer.

She must then continually model, behaviorally and verbally, as well as reinforce the desired responses. Furthermore, she must organize the classroom so that peers may be seen as models of the desired responses and may function as reinforcers of these responses when they appear in others. And, finally, she must organize experiences that will allow each child to respond in the intended manner and to be reinforced for doing so.

Development of Curricular Units

Initial attempts to put these ideas into a form for adoption by teachers resulted in highly abstract descriptions of teacher-child interactions. Although the teachers periodically met to discuss these ideas and the research staff frequently visited the classrooms, getting the ideas into action was difficult. It soon became evident that teachers need specific guidelines, perhaps even specific activities, that can be carried out daily as lessons in motivation. The development of specific activities thus began, providing teachers with concrete examples of the manner in which they should continually interact with each child. At the same time, each child was insured that on any one day he would have at least one experience that hopefully would increase his motivation for learning. In this manner, a motivation curriculum began to take shape in the early stages of this program of research. It consisted of a description of types of teacher-child interactions that should be going on continually, designated as ongoing activities, and a series of specific activities designed to focus on modeling and/or reinforcing one of the response constituents. Both the ongoing and the specific activities are intended to be completely individualized, with teachers instructed to alter them to fit their own personalities as well as the personalities and level of development of the children. This format has been used for each of five curricular units, i.e., one unit to

teach each of the response constituents of motivation to achieve.

The first explorations into classroom implementation of these curricular ideas, in 1969-70, seemed encouraging. Teachers were in general favorable, but they pressed for more of the specific activities. In particular, they expressed insecurity in their abilities to carry out the ongoing activities. Extensive observations and evaluations of the teachers verified suspicions that teacher-training techniques were not sufficiently effective to increase the occurrence of ongoing intervention. The development of specific activities has continued, and the revised curriculum was tried out in combination with other curricular modules. Although significant changes were not yet forthcoming and difficulties in training teachers in relatively brief periods had not been solved, there were sufficient signs of encouraging progress to warrant continuation (Adkins & Espinosa, 1971a). Hence, in 1970-71, curriculum revisions continued in the following manner prior to further classroom testing.

Each unit was carefully analyzed for consistency with the theoretical concepts being formulated. Those activities that could not be rationally justified on this basis were revised or eliminated. Each newly created activity was similarly weighed against the theoretical orientation.

Once these drafted ideas had passed this initial stage, they were prepared for pilot-testing with children. At this point, research assistants went into classrooms and tried out the various activities with children individually or in small groups. Although most of the activities had been originally designed for preschool children and were appropriately tried out with children of this age, a number of the activities were modified and explored for use with kindergarten and/or first-grade children in the New York area.

In each instance, evaluation of the materials was based on several criteria: (1) the feasibility of the procedures, i.e., whether or not the directions were sufficient, the responses required were possible to obtain, the time allotment was adequate, etc.; (2) the attractiveness of the activities, i.e., whether or not the activities were of sufficient interest to engage the child's participation (Although temporary interest in any one activity should not be construed as being synonymous with motivation for learning, it is necessary to obtain the child's participation in order to teach him. The activities were therefore designed with the child's enjoyment in mind.); (3) the nature of the responses elicited, i.e., whether or not they were consistent with those the activities had been created to elicit. (The children's verbal and behavioral comments were gathered and generally compared to those hoped for in the original design.); (4) the teaching potential of the activities, i.e., the extent to which they would help and require each child to respond in a way in which he had not been able to respond before. It was reasoned that if the child was already able to make the response being taught, the activity needed to be modified in order to pace the child towards increased competence.

Another major consideration in the development of these materials was teacher receptivity to carrying out the activities. Due to the prominence of her position and the necessity for her to constantly model and reinforce the desired responses, it is critical that she understand and be able to implement not only the specific activities but also the ongoing interaction with the child. Unfortunately, limited resources did not allow in-depth exploration of this area. Most of the activities were tried out initially, however, by research assistants who were also experienced teachers. Lengthy interactions with these "teachers" provided some direction in this important

area.

On the basis of evaluations against these criteria, the materials were revised or discarded. In a few instances it was possible to try the activities with additional children in the New York area. At this point, it seemed that the primary criterion for evaluating the effectiveness of the activity ought to be whether or not it allowed for either the modeling, experiencing, or reinforcing of the response it was designed to teach. Although the activities had been created with this intent and rather generally evaluated on this basis, some more substantial indications that such opportunities were occurring needed to be obtained.

Study of Teacher-Child Interactions

A study to investigate in detail the teacher-child interaction during the ongoing and the specific activities was undertaken. The procedure was to carefully record and analyze the total interaction during the presentation of the activities and then to identify the nature and number of responses resulting from each situation. For this study, children were obtained from four pre-kindergarten classes in an urban school in New York City. They were primarily from lower-middle economic environments and represented black and Puerto Rican ethnic backgrounds. The classes were taught by two teachers, each handling one morning and one afternoon session.

Each teacher was asked to pool judgments with his aides in identifying the four children in their classes who seemed to like school less than any of the others. At the same time, Gumpgookies was individually administered to the children (N=51). The eight children identified by the teachers along with all children whose Z scores (Adkins & Payne, 1971a) were 90 or below on Gumpgookies were systematically observed by two independent observers (N=15). The purpose of these observations was to record what might be

behavioral indications of the response constituents of motivation to achieve. Prior to observing, the observers participated in extensive discussions with the Fordham University component of the research staff as to the meaning of each of the response constituents of motivation to achieve and what might be behavioral indications that the responses are present in children.

These observational data were then used in conjunction with the teacher ratings and the scores on Gumpgookies to identify the two groups of four children, essentially the same on each of the three indices. Two boys and two girls constituted each group, with equal numbers in each group and sex taken from the two teachers' classes. Each research assistant was then assigned to work with one boy and one girl, one of each from each of the two teachers' classes.

The four children then individually were exposed to an abbreviated form of the motivation curriculum from a research assistant. This form of the curriculum consisted of essentially the same or similar ongoing activities that appear in the separate manual, "University of Hawaii Preschool Motivation Curriculum" (Adkins & Ballif, 1971) and four specific activities from each of the five units. A new unit was presented at the beginning of each of five weeks. One day a week was left open to allow for field trips and make-up lessons for children who had been absent.

Within each session, extensive records of the "teacher"-child interaction were kept. Every indication of a child's response was recorded, as well as every explicit and implicit attempt the teacher made to stimulate and reinforce the child. These data were then examined carefully for numbers of affective, conceptual, purposive, instrumental, and evaluative responses that were made by the child; for those events that seemed to

precede and thus give rise to the responses found; and for the nature of the reinforcement contingent upon the responses. Inasmuch as the presence of all of the five responses was recorded in each session, it was possible to look also for indications of the persistence of these responses over time, although the specific structuring of the activities appropriately seemed to prohibit the children from responding in ways other than that particular one being taught.

While it had been hoped that the responses could be quantified, several attempts to do so were found grossly inadequate. The number of times the desired response occurred for each activity was obtained for the four subjects and averaged. The written records were also used, inferentially, to provide further information and direction for continued development of the various activities. Revisions continued always towards creating activities that would stimulate the imitating, eliciting, or emitting of the specified responses and that would provide opportunity for them to be modeled or reinforced by a significant adult or peer figure.

On the basis of this intensive observation, activities were revised as needed and incorporated with other activities for further trials with Head Start classes in Hawaii.

Finally, the Hawaii Center staff--who had been actively engaged in applying the curriculum, as well as Head Start teachers who had used it--submitted detailed reactions on the basis of their experience with both the ongoing and specific activities. The entire manual was then revised once more.

Although the benefits of teacher reactions to the materials have been sought constantly, it seems clear that the use of the curriculum will be most effective if there is opportunity for preliminary teacher-training conferences and possibly for periodic discussions as well.

Procedures for Project B

The goal of the motivation project for 1970-71 thus was to revise and further develop the motivation curriculum through a combination of further tryout, revision of materials, teacher evaluation, and summative evaluation. The desirability of developing a motivation curriculum that would be useful for grade levels beyond preschool as well as for the preschool levels had been described in the original proposal. However, problems in gaining access to Hawaii public school kindergarten classes, once funding of the project had been assured, led to a decision to concentrate full attention on the curriculum for preschoolers. The inaccessibility of the public school classes resulted from the Hawaii State Department of Education's reluctance to introduce new curricula that might tax teachers who already were committed to other workshops and programs by the time the motivation curriculum could be proposed with full assurance of funding. Once this decision was made, the consequence was a further delay of six weeks in the onset of teaching the curriculum, since suitable preschool classes then had to be located and workshops conducted.

The motivation curriculum was presented in Hawaii as the sole curriculum module in three classes (MO1, MO2, and MO3) and in combination with other curricula in two classes (CC1 and CC2; see Project A). Teacher training was necessary only in the MO classes, because the motivation curriculum was administered in the CC classes by experienced Center staff

Teacher training in the MO classes was conducted preparatory to the introduction of each curriculum unit. The effectiveness of the teacher training was monitored weekly by a Center staff member who observed in the MO classrooms. A portion of the training sessions was reserved for

eliciting teacher comments regarding alterations that were needed in units completed and in those not yet attempted. Teacher sessions with suggestions for planning and modifications were also held in the CC classes.

Teacher feedback and observations at both schools suggested that the first two units of the motivation curriculum could be taught directly from the available scripts developed in New York. The last three units, however, were judged to be in need of further clarification and modifications in order to make the specific activities more readily interpretable by the teachers. Changes were made in the last two units for the CC classes, whereas those made for the MO classes affected the last three units. The curriculum therefore was taught in fundamentally the same manner at both schools except that Unit 3 (Purposive Behavior) was taught in revised fashion in the MO classes but in the original fashion in the CC classes. The fact that the MO classes were six weeks behind the CC classes in teaching the curriculum, the result of an unavoidable delay in obtaining classes, permitted the MO classes to receive the benefit of many of the suggestions for changes derived from the CC classes. Time limitations in formalizing and codifying the changes prevented Unit 3 from being taught in the revised form in the CC classes as well as in the MO classes.

Some exploratory work has been done with a criterion-referenced measure on Unit 3, the unit that deals with purposive behavior. This form of assessment has been administered to the MO classes and to comparison classes in the University Laboratory School. These measures are conceived of as a supplement to and not a substitute for the post-tests planned previously.

Samples: MO1, and MO2, and MO3

The three preschool classes of the Aiea Elementary School (MO1, MO2, and MO3) were made up of children from Puuwai Momi Housing and the surrounding communities of Aiea, Waimalu, and Halawa. These children were generally of mixed Hawaiian ethnic backgrounds.

The classes, located adjacent to the Aiea Elementary School Cafeteria, were large and attractively decorated. The children's art works were often displayed on shelves or on the bulletin boards. An area was set aside for doll playing as well as block playing. Aside from a classroom sink, there were rest-room facilities between the classes and ample room for outdoor play in the school yard. The children frequently used the swings and monkey bars to the right of the building and also rode their tricycles and wagons on the walkways as well as on the grass.

Results and Conclusions

The motivation curriculum was evaluated by contrasting the MO classes with classes which did not have the MO curriculum but which had a curriculum that would not be particularly expected to produce increases in motivational skills. For this comparison, the classes that had the music curriculum were selected. Both the motivation and the "no-motivation" classes were administered the Gumpgookies test as a pre-test in November and as a post-test in May. The Gumpgookies yields a total score and scores on five factors--affective responses, conceptual responses, purposive responses, instrumental activity, and evaluative responses. Analysis of covariance was used to contrast the motivation and no-motivation classes, with the pre-test as a covariate and the post-test as a dependent variable. This analysis was applied to each of the factor scores and the total score. The CC classes

were not included in this analysis, even though the motivation curriculum was taught in them, since the curriculum combinations were analyzed in Project A.

The results of the analyses of covariance on the Gumpgookies with Groups MO and MU are presented in Table 12. The pre-test was used as the covariate and the post-test as a dependent variable in these analyses. None of the differences between adjusted post-test mean scores was statistically significant; however, the analyses of Factor 1 and Factor 3 approached significance at the .05 level. The differences between adjusted means were in the predicted direction on Factor 1, but were in the non-predicted direction on Factor 3.

The lack of significant differences on the Gumpgookies as a result of intervention with the Preschool Motivation Curriculum is generally consistent with the results reported in Project A and is totally consistent with results reported in the Center's 1969-70 final report (Adkins & Espinosa, 1971a). The only difference between the current analyses and those of last year is that last year's post-test scores were adjusted on the WPPSI full scale IQ pre-test as well as on Gumpgookies pre-test.

The question raised in Project A--whether the lack of significant differences is attributable to the test, the curriculum, or both or to the fact that the test, the curriculum, or both might be more suitable for somewhat older children or children from other than a Hawaiian culture--has not been satisfactorily answered in the analyses presented in Project B. The motivation curriculum was designed specifically to teach the components of motivation initially hypothesized in the development of the test, Gumpgookies. Moreover, when the test was factor-analyzed, it generally seemed to assess the same five areas focused upon by the curriculum.

Table 12

Simple Analyses of Covariance on
Gumpgookies with Group MO (N = 36) vs. MU (N = 44)

Variable	Group	Covariate (Pre-Test)	Post-Test	Adjusted Post-Test	df	F	p
GUMPF1	MO	101.69	101.89	101.68	1,77	3.00	.08
	MU	98.00	95.25	95.42			
GUMPF2	MO	97.92	99.00	99.00	1,77	.14	n.s.
	MU	99.23	97.98	97.97			
GUMPF3	MO	101.06	92.53	91.07	1,77	3.21	.07
	MU	92.16	95.55	96.74			
GUMPF4	MO	96.28	99.89	--	1,78	.02*	n.s.
	MU	99.02	101.80	--			
GUMPF5	MO	94.03	103.47	103.43	1,77	.86	n.s.
	MU	92.20	101.09	101.13			
GUMPTT	MO	95.11	96.81	96.17	1,77	.19	n.s.
	MU	90.25	94.32	94.84			

* The group slopes in the analysis of covariance were significantly different for this comparison. The F reported here is the interaction effect for an analysis of covariance with two independent groups (CC vs. MO) and two totals (pre-test vs. post-test).

Nevertheless, no significant differences have been reported for four-year-old Head Start children in three different analyses conducted with the instrument--the 1969-70 final report (Adkins & Espinosa, 1971a), Project A, and Project B. Earlier analyses of the test showed that Head Start students subjectively rated high and low in motivation by teachers scored significantly differently on the Gumpgookies total score in the predicted direction (Adkins & Ballif, 1970b). Furthermore, the combination of the preschool quantitative curriculum with the motivation curriculum produced significantly greater adjusted post-test total scores than the motivation curriculum alone in the 1969-70 final report, suggesting that the quantitative and motivation curricula interact. This finding was not replicated in 1970-71 with the combined curriculum group.

In the absence of significant gains from pre-test to post-test on the Gumpgookies, the question arose whether or not the test would discriminate, as reported for an earlier study (Adkins & Ballif, 1970b), between children rated high and low in motivation by teachers. The teachers in that study were asked to rank their children on the basis of a subjective estimate of the correspondence between a written description of motivation and the child's actual behavior. In the present study, ranks were obtained from scores on two instruments, the Zigler Rating Scale (ZIRS) and the Adkins-Ballif Rating Scale (ABRS), both intended to reflect a teacher's impression of the child's motivation to achieve in school. Each instrument contains statements about characteristics of motivated and unmotivated children, and the teacher is asked to rate the child on each statement on a scale from one to four. The ratings are summed to obtain a total score on each instrument.

Data were collected from Groups CC and MO on those instruments, the ratings having been completed in Group MO by a Center staff member who had observed the children weekly throughout the school year, and in Group CC by the regular teacher and by two Center staff members. One Center staff member in Group CC, the teacher of the language curriculum, rated half the children. The other Center staff member, the teacher of the quantitative curriculum, rated the other half. Since the regular teacher rated all of the children, there were two ratings available on each child. The final rating assigned to each child in Group CC was the average of these two ratings. The ratings on each instrument were ranked separately for the children in the two groups, and the upper and lower 25% of the children on these rankings were identified. For the Gumpgookies age-normed factor scores and total score, tests of significance of differences of means between the high and the low ranked groups in each class were computed.

The results of uncorrelated t-tests between groups ranked high and low in motivation by each instrument are presented in Table 12.1. Data are reported separately for Groups MO and CC, and for the total score and each age-normed factor score on the Gumpgookies. The mean difference between high and low motivation groups was for each comparison significant in the predicted direction irrespective of the scale on which the rankings were obtained. Teachers' rankings of children's motivation to achieve at the end of the school year thus are strong indicators of the magnitude of the Gumpgookies total and factor scores. These results are in support of the Adkins and Ballif findings and suggest that the Gumpgookies is assessing real and measurable components of motivation to achieve. Alternative explanations of these results may be plausible, however, and a firm conclusion should not be reached without further exploration.

Table 12.1

Tests of Significance on the Gumpgookies for Children With High vs. Low Scores on the Motivation Rating Scales

Group	N	Motivation Rating Scale	Gumpgookies Post-Test Score	Mean of High-Scoring Group	Mean of Low-Scoring Group	t	p
MO	24	ZIRS	F1	113.17	97.58	3.43	<.01
			F2	115.50	99.08	3.52	<.01
			F3	112.25	96.42	3.35	<.01
			F4	116.67	97.00	3.10	<.02
			F5	113.33	97.50	3.51	<.01
			TT	103.92	89.42	3.02	<.02
		ABRT	F1	112.33	98.42	2.90	<.02
			F2	114.83	100.25	3.03	<.02
			F3	111.50	97.08	2.89	<.02
			F4	112.00	97.67	2.94	<.02
			F5	112.58	98.33	2.98	<.02
			TT	103.83	89.75	2.72	<.05
CC	18	ZIRS	F1	114.33	99.22	3.07	<.02
			F2	116.44	101.11	3.05	<.02
			F3	113.78	98.33	3.10	<.02
			F4	113.89	98.67	3.11	<.02
			F5	114.56	99.11	3.23	<.02
			TT	106.67	91.67	2.94	<.05
		ABRT	F1	114.33	97.00	3.39	<.02
			F2	116.44	98.89	3.35	<.02
			F3	113.78	95.89	3.44	<.02
			F4	113.89	96.00	3.51	<.01
			F5	114.56	97.00	3.38	<.02
			TT	106.67	88.44	3.37	<.02

The solution to the extremely difficult problem of identifying effects from the motivation curriculum with the Gumpgookies may in part be to supplement this summative evaluation instrument with formative evaluation, to use some current terms (Bloom, Hasting, & Madaus, 1971). Formative evaluation consists of using criterion-referenced tests, or tests that are directly extrapolated from the curriculum, to assess whether or not the performance objectives of the curriculum are in fact being achieved. The tests are administered immediately following the presentation of the unit containing the objectives, and may be designed to test both retention and transfer. Some of these tests may resemble situational tests, as discussed by Thorndike and Hagen (1969) and others.

Another solution to the evaluation problem may be to design micro-experiments in which fundamental aspects of the curriculum are tested in controlled settings. The behaviors expected to result from specific segments of the curriculum may be precisely defined, as with the formative evaluation, and the segment of the curriculum that is expected to produce those behaviors may be introduced. The specific curriculum segments are introduced to the group that is exposed to the curriculum over a year and to a group that is exposed only to that segment of the curriculum, while a control group receives no treatment. Alternatively, a modified treatment group could receive the same curriculum segment but be taught in a different way that is suspected to have greater impact than the existing method of instruction. Comparisons among these groups should reveal important differences that would enable more precise statements about the effectiveness of the curriculum.

Another aspect of evaluating the curriculum will be to determine whether or not the teachers are in fact implementing the curriculum as it

was designed. Such quality control has always been an important focus of the Center's efforts, but heretofore no systematic data have been collected to determine whether or not the ongoing activities are being conducted as stated in the curriculum guide. The development of observational instruments to determine the extent to which curricula are being conducted as designed should be an important part of the Center's future efforts.

In passing, it may be noted that four additional elements may be serving to obfuscate the results and their interpretation. First, in the work of the Center with Head Start classes to date, it has been impossible to even approximate a condition in which children are randomly assigned to different treatment groups, or, better still, to a definite educational intervention treatment designed to foster motivation versus no educational treatment at all. The best that has been possible is a crude approximation to the former comparison, with a hope that two groups to be compared do not differ in uncontrolled ways that would affect the outcome.

Second, the norms used for the Gumpgookies test, although based upon the best data available for some 1500 four-year-old children collected for another purpose, cannot be regarded as based upon a randomly selected sample of Head Start children.

Third, some of the curricular modules with which the motivation curriculum has been compared in their effects themselves involve a high degree of very specific attention to motivation. This is especially true of the language and quantitative curricular modules, which begin with definite attention to tangible rewards and are accompanied with social rewards and much individual attention from the teachers and aides. This may suggest that the motivation curriculum should be applied with an accompaniment of tangible and more specific social rewards, at least for a limited tryout.

Finally, in this sort of experimental work in a relatively untried area and with a very limited number of teachers, one can but speculate about the effects that may be attributable to particular teachers, with their individual teaching styles, irrespective of particular curricular contents and methods to which they may be exposed. It is undoubtedly true that some teachers who have never heard of a special motivation curriculum will be more successful in motivating children than will others who have been exposed to an extensive training program in a particular curriculum and give it their assiduous attention. Clearly, then, the ideal experiment, which remains to be done, must involve many more teachers of presumably equal qualifications and greater assurance of random assignment of children to different conditions that can be controlled and described.

In addition, as mentioned earlier, a major aspect of the problem may be that some four-year-old children--or even the majority--have not attained a level of cognitive development sufficient for understanding and retaining the basic concepts of motivation to achieve. Although the investigators are not yet fully convinced that this is the case, they nevertheless plan to devote some efforts during the coming year to application of the newly devised curriculum to older children, in kindergarten classes.

SUPPLEMENT TO PROJECT B

Special Attempts To Measure the Affective Component of Motivation

Precise measurement of the response constituents of motivation to achieve must be developed prior to an experimental verification that the probability of these responses can be increased through planned classroom intervention. Five constituents of motivation to achieve have been theoretically derived: affect, self-concept, planning, instrumentation, and self-evaluation (Adkins & Ballif, 1970a; 1970b; Ballif & Adkins, 1968; Ballif & Adkins, 1971). The affective component of motivation to achieve is defined as the expectation of positive consequences from achieving in school and is conceived of as a primary element in the acquisition of the remaining constituent responses. In view of the predominant position that affect plays in motivation and of the order of the hypothesized constituents, affective responses received priority in the efforts to measure motivation to achieve.

Although some attempts to quantify affective responses have been undertaken, the general unavailability of effective instruments appropriate for use with young children has been disappointing. Past efforts at the University of Hawaii (Adkins & Ballif, 1970a) have produced an instrument, the Gumpgookies, that has some promise for measuring motivation to achieve in young children. One identified factor is directly related to expecting positive affect from working in school. Hence a special study was begun by attempting to successfully maintain the interest of a young child while attempting to discover his expectations of affect from achieving in learning in school.

After several approaches had been explored, it was decided to create two separate situations involving tasks and questions using puppets and

dolls. The explicit purpose of both exercises was to determine the child's expectations of affect from achieving in learning in school.

Woofles--Woofles is a little hand-puppet friend of the examiner. The child is told that it is Woofles' first day in school and that he wants to ask how the child feels about school. In the initial testing of this situation, Woofles asked the child whether or not he likes to go to school. If the child's answer was "Yes," Woofles asked him why he likes to go to school. Similarly, if the child's answer was "No," Woofles asked him why he did not like to go to school. For either answer, the child's verbal responses were recorded and classified as indicative of positive or negative attitudes toward school. The test is presented in Appendix G. This procedure was tried out with 20 children in one kindergarten class in an urban public school. The children were all from lower-middle economic backgrounds and black, white, or Puerto Rican.

Responses of most children tended to be general and brief. When the children were asked how they liked school, they simply answered, "Fine." Fortunately, some more verbal children provided clues as to what a child considers when asked to think about his feelings towards achieving in learning in school. These responses were limited in the range of affect expressed, however, in that the positive responses far outnumbered the negative, probably because the children were hesitant to express dissatisfaction.

Careful inspection of these responses formed the basis for writing 48 questions about achieving in learning in school. The writing of these questions was the combined effort of three members of the Fordham University component of the research staff, representing classroom teaching experience as well as competence in the areas of measurement and motivation theory.

These specific questions are answerable by either a "Yes" or a "No" and are accordingly recorded.

Each of the 48 questions pertains to a specific school-related activity. Of these, 24 are positively and 24 are negatively related to achieving in learning in school. However, all of the questions were not considered to be equally important to determining how much the child liked achieving in school. Hence, initially each item was given two weights: if the item described an activity indicative of a positive attitude toward learning in school and was answered "Yes," it was given a weight ranging from +1 to +5. If this same item was answered "No," it was given a weight ranging from -1 to -5. Conversely, if the item was indicative of a negative attitude toward learning in school, a "Yes" answer was weighted between -1 and -5, and a "No" between +1 and +5. Later results indicated, however, that the scores yielded by the weighted scoring correlated nearly perfectly with simple dichotomous scoring. This finding is of course in line with theoretical expectations (Wilks, 1938). Hence the more complicated scoring has been dropped.

For each question, the verbal description is paired with a photograph illustrating the specific school activity. Three children appear in each photograph: one black, one white, and one Puerto Rican. (These ethnic characteristics can be varied for administration to children of other racial backgrounds.) The sex of the child for each race represented, as well as the degree of participation in the school activity being illustrated, was determined by random assignment. Attempts were also made to select equally attractive children to pose for the photographs. Expressions of emotions were eliminated so that each photograph provided a visual definition of the item without influencing the child's expectations of affect.

In this new format, Woofles asked each of his new friends individually if he liked each of the 48 activities described verbally and photographically. The child simply answered yes or no to each question. This format was pilot-tested on 20 black and Puerto Rican kindergarten children from an urban school, drawing from a lower-middle economic class. Among these 20 children were five who had been identified as children who appeared to like school less than the rest of their class. The data collected from this administration provided needed information for additional procedural and format revisions. The instrument was adjusted accordingly and prepared for trial on a larger sample.

Although it had been intended that the sample for this trial would include a large group of children from lower- to upper-economic environments representing various ethnic backgrounds, the withdrawal of several private kindergartens made it impossible to obtain the desired sample prior to the writing of this report. Nevertheless, data were gathered for 78 kindergarten children primarily from a lower-middle economic background. These data are now being analyzed and plans to expand the sample are under way.

Doll Play--As a second attempt to assess responses in the affective area, a replica of a classroom was prepared in which dolls were presented in open-ended school situations. The dolls--two boy dolls, two girl dolls, and one female teacher doll--were made out of large colored pipe cleaners and wore felt clothes. The classroom was painted on a large piece of cardboard. In each of the original four situations, the teacher and/or three of the children were taking part in learning and/or playing. The fourth doll, always of the same sex as the child being tested, is alone and equidistant from the other groups of dolls. The child is asked questions about the lone doll: what the doll is doing, what the doll will do next, how the doll

likes what it is doing, why the doll chose to do what it is doing, etc. The test is presented in Appendix H.

This procedure was initially tried out with 10 children. Included among these children were those five who had been identified by their teachers as liking school less than the other children in their class. The results from this experience suggested that the children were not given sufficient structure to either stimulate or to guide their responses.

The format was revised to provide more structure, using ideas selected from the seven Gumpgookies' items loading most heavily on a factor defined as work enjoyment, a factor pertaining to the affective area. Each situation in the revision began with a choice between two alternatives. The child was instructed to move his doll in one of the two directions presented. Three questions followed, providing the examiner with an opportunity to probe the child for the reasons behind his doll's behavior and hence for further information concerning the child's feelings toward achieving in learning in school.

Different scoring procedures are being explored. Weighted scoring has been used, with weights ranging from -5 to +5; but it is possible, even with the fairly small number of items, that simpler scoring will prove as effective.

It had been hoped that this instrument could be tried out on a large and varied sample, but the unavailability of children prohibited doing this during 1970-71. Nevertheless, the instrument was administered to 77 kindergarten children from the sample used for Woofles. These data are now being analyzed.

Correlations Among Woofles, Doll Play, and Gumpgookies--Although both Woofles and Doll Play need to be tried out on larger numbers of children and

such data further analyzed, current data yield an indication of the relationship of these instruments to Gumpgookies. Gumpgookies was administered to 56 of the children who had previously been administered Woofles and Doll Play. Total scores on Gumpgookies, as well as a subscore for the seven items with high loadings on the work-enjoyment factor, were correlated with Woofles and the weighted scores for Doll Play (Table 13).

Although the correlations appear promising, these data need to be more thoroughly analyzed. Although the sample was extremely homogeneous with regards to age, IQ, and economic background, these variables may need to be explored in future studies. Furthermore, at the time these data were analyzed, procedures were not available to obtain exact factor scores for Gumpgookies that have had response-set scores partialled out. Such procedures are now available and should be utilized. The scoring of Woofles and Doll Play may warrant some further exploration, as does the possibility of adding more items to both of these instruments.

The indications from the results of this effort to assess the affective response constituents of motivation to achieve appear promising. Both of the new instruments, Woofles and Doll Play, appear to measure affective responses and are efficient and enjoyable experiences for children. Perhaps in some combination they may form useful tools for experimental testing of the classroom intervention designed to increase expectations of positive affect from learning in school.

Table 13

Correlations Among Woofles, Doll Play, and Gumpgookies (N = 56)

	1	2	3	4
1. Woofles Scored with unit weights	-	.49	.41	.15
2. Doll Play Scored with differential weights		-	.53	.40
3. Gumpgookies			-	.62
4. Gumpgookies (Seven items loaded on the work-enjoyment factor)				-

CHAPTER V

PROJECT C: EVALUATION OF THE UNIVERSITY OF HAWAII PRESCHOOL MUSIC CURRICULUM

Procedures

The University of Hawaii Preschool Music Curriculum was initiated in the summer of 1969 by the Center as a preliminary step toward developing both cognitive and affective responses of preschool children to music. The cognitive components pertain to functional foundation behaviors that young children can attain in the area of musical understandings, and the affective components are directed toward attitudinal correlates of the acquisition of these understandings. The curriculum was first taught during 1970-71, following preparatory work necessary for the development and processing of appropriate instructional materials.

The curriculum as originally planned consisted of a Teacher's Guide, Songbook, and Tapes, all of which were integrated and cross-referenced for easy use. The revision resulting from the past year's experience consists of a manual, Music for Preschool and an accompanying songbook (Adkins, Greenberg, et al, 1971).

The Guide contained a detailed set of behavioral objectives; ideas on how to organize and plan for instruction; ways in which music may contribute to language and quantitative learning; materials to use; general suggestions on how to teach listening, singing, rhythmic movement, using instruments effectively, and creating music to children; ideas on how to develop concepts about music; sample lesson plans; and specific activities to use for songs and recordings. Emphasis was placed on providing the children with various encounters of many types of authentic musics from all over the world so that they could increase their aesthetic awareness of music and its structure, i.e., the organized elements and processes of music that make it an art form. The Songbook contained the words and

music of more than 300 songs suitable for the preschool child, and the Tapes contained many of the songs and recordings referred to in the Guide.

The curriculum was divided into three units, or levels, and was structured to accommodate a wide range of teacher musical understanding and skill. The teacher, nevertheless, was to have primary responsibility for selecting and trying the different combinations of activities suggested in the Guide. The typical lesson, lasting from 20 to 30 minutes a day, might include the following components: objectives related to music and its structure; lists of materials to use; activities such as singing, listening, rhythmic movement, playing instruments, and creating; and content sequenced from review of familiar material to work with new material.

In the current year, the music curriculum was introduced in five Head Start classes (MU1, MU2, MU3, MUPH1, and MUPH2) in Honolulu following the completion of teacher training workshops in late October. In two of these classes (MUPH1 and MUPH2), Physical Activities for Preschool (see Project D) was also introduced. Dr. Marvin Greenberg, a consultant to the Center in the field of music, who had primary responsibility for the content of the music curriculum, conducted workshops to fully acquaint the four participating teachers with the methods and materials necessary to use the program. The program was monitored through formal self-evaluation procedures and through regular visits by a Center staff member.

Because of the timing of negotiations regarding the grant and of its final approval, the curriculum was initiated in classes rather late, thus necessitating certain modifications in the manner in which it was implemented. Materials for Level III were omitted completely, leaving the

songs and recordings in Levels I and II as the principal body of the curriculum for 1970-71.

Modifications were also made in the curriculum because of technical difficulties with the cassette tapes. Originally, the tapes contained record transcriptions. Individual selections were often hard to find on these tapes, and copyright difficulties and budget limitations prevented the use of many such transcriptions as well as of some songs in the original Songbook. Live piano transcriptions of recorded instrumental works were substitutes but proved to be unsatisfactory.

The range of experience of the teachers appeared to influence the extent to which the curriculum was satisfactorily implemented, in spite of the fact that the Guide and workshops were intended to accommodate teachers with varying degrees of musical knowledge. Several workshops were held in January and February for two teachers with a limited music background who had experienced particular difficulty in conducting their lessons. Dr. Greenberg followed these workshops with in-class demonstrations by teaching one lesson per week in each class. His visits in these classes, in addition to serving a teacher-training function, helped to provide a more adequate balance of the content and activities of each lesson, since the areas he introduced were covered by the teachers in the days following.

Samples

MU1.

The children in this Head Start class were largely a part-Hawaiian ethnic group and were bused to school from the Kapahulu District.

The classes were located adjacent to the Ala Wai Elementary School and Park and were held in a relatively large, wooden temporary building. In the classrooms were blocks, a doll corner, shelves for books, and a cubbyhole for each child. The classrooms were decorated in a bright and cheerful fashion. The children played on the school grounds but often were taken to the Ala Wai Park, which has a large sandbox and large cement turtles on which children climb and play. A wide grassy area in the park provided ample room for running.

MU2.

This preschool was located in a very old church in Palama, one of Honolulu's more depressed areas. The children lived near the school in an area where there were many part-Hawaiian people and a growing number of recent immigrants from Micronesia. Many of the children walked to school with parents or older siblings.

The classroom consisted of two large rooms connected by double doors. Three alcoves off one of the rooms served as a doll corner, a listening and library corner, and a block corner. Besides being quite old, the building had high ceilings, wood floors, and very poor acoustics, all of which magnified the normally high noise level. This environment was not well suited for musical activities. In the large yard were swings, slides, and a sandbox. Although used outdoors, tricycles, wagons, and fire engines were frequently also used indoors by the children. Rest-rooms were located in a separate building to the rear of the classroom. The classroom contained only a few small windows but was well equipped, roomy, and usually well lighted. Several high-school girls from the Neighborhood Youth Corps, an organization for helping dropouts find jobs, were assigned to the class as aides.

MU3.

Located in a low-income housing area near Kamehameha Heights and administered by the Susannah Wesley Community Center, this preschool drew from a primarily part-Hawaiian neighborhood. Although this area of the city of Honolulu is one of the poorest, the homes and lawns were neat, well kept, and attractive. The children walked to school or were brought by their parents.

The class was held in a medium-sized room adjacent to the housing office and clinic. There was plenty of equipment and the walls were well used for the display of posters and art work. In spite of having high windows and only two doors, the room was well lighted. The classroom was located adjacent to a large, grassy, fenced yard with some trees and a minimum of playground equipment. The teacher was assisted by a Neighborhood Youth Corps worker and was frequently helped by mothers or other volunteers.

MUPH1 and MUPH2.

The children in these two classes were largely of part-Hawaiian extraction, and were bused in from Punchbowl, Pauoa, Papakolea, and Moiliili. The children in both classes were four-year-olds.

Both of these Head Start classes were held in a wooden building with the two large classrooms accessible to each other through a sliding glass door. The classrooms were bright and well ventilated. The walls were frequently used to display the children's art work. In the front of the classes was a porch where the children painted or rode bicycles. There was also a big, grassy yard for outdoor play, as well as swings, monkey bars, slides, and jungle gyms for use by the children. Within the building complex was a health center, where the nurse checked the children each morning before class and administered limited medical aid when necessary.

Results and Conclusions

Since development of the music curriculum is still in its early stages, the preliminary tryout in the current year is in the nature of a feasibility study rather than an evaluation study. Nevertheless, some early efforts in the direction of evaluation of the curriculum, even in its initial form, were deemed to be worth while.

It was possible to compare classes in which the music curriculum had been taught with those in which little music experience occurred apart from the singing of nursery school tunes and infrequent instrumental and movement activities. The contrast groups selected were the M01 and M03 groups, in which the motivation curriculum but no special music curriculum had been taught. Since there is little reason to believe that instruction in motivation would serve to appreciably increase understandings about music, the MO classes provided a clear contrast group for the music classes.

A Music Achievement Test (MAT) had been constructed in an attempt to assess some of the content objectives of the curriculum. It is to be viewed as a first, experimental edition. Individually administered, it consists of 30 items and requires about 15 minutes per child and samples the following areas: tones in the environment (two items), expressive elements (seven items), rhythm (11 items), and melody (10 items). It is clear that sub-scores based upon such small numbers of items cannot be of high reliability. A stepped-up, odds-evens reliability estimate for the total score on the initial administration as a pre-test was only .65 (N = 77). When the test was developed in the fall of 1970, it had been planned to do further work with it in 1971-72 and subsequent years, based upon item analysis and tryout of additional items and testing techniques. In view of the unanticipated lack of financial support for such an effort, it must be postponed indefinitely.

In its present form, then, the test is not regarded as a satisfactory evaluative instrument. Nevertheless, since it had been given as a pre-test in October and as a post-test in May to children in five classes that had been presented the music curriculum and two that had not, the results of the analyses of the MAT data are being presented.

The pre-test scores for each of the four sub-components and for the total test were used as covariates for the corresponding post-test scores. The post-test scores were thus the dependent variables in analyses of co-variance contrasting the music and non-music classes.

The results of the analyses of covariance on the MAT total and sub-scores are presented in Table 14. On all subtests and on the total score, the adjusted post-test means were higher for the music (MU and MUPH) than for the non-music (MO) classes. Only on Subtest 3, Rhythm, however were the differences significant.

The significant difference between adjusted mean scores on the Rhythm subtest indicated that Group MU, which received only the music curriculum, scored relatively better than the other groups on the post-test. This difference was unexpected, since the combination of curricula in music and physical activities (Group MUPH) might have been expected to lead to greater improvements in rhythm.

The mean MAT scores reported are in terms of raw scores and are not age-normed because data to yield age norms are not available. In terms of raw scores, it seems clear that all classes, both the music and the non-music, improved substantially from pre-test to post-test. Despite the attempt to select contrasted groups of classes in terms of exposure to music, it may be that the children in the non-music classes nevertheless had sufficient experience in music to show marked gains on the test. Or

Table 14

Analyses of Covariance on MUAT Subtest and
Total Raw Scores, Groups MU (N = 39), MUPH (N = 18), and MO (N = 20)

Variable	Group	Mean Scores: Covariate (Pre-Test)	Mean Scores: Post-Test	Mean Scores: Adjusted Post-Test	df	F	p
Total	MU	17.23	27.56	27.38	2,73	2.14	n.s.
(Items 1-30)	MUPH	17.53	27.12	25.53			
	MO	16.20	24.25	24.69			
Sub 1*	MU	.95	1.88	--	--	--	--
(Items 1-2)	MUPH	.94	2.06	--			
	MO	1.30	1.55	--			
Sub 2	MU	5.88	9.03	9.00	2,73	.14	n.s.
(Items 3-9)	MUPH	6.06	9.76	9.15			
	MO	5.45	8.70	8.81			
Sub 3	MU	6.03	10.36	10.31	2,73	4.87	< .01
(Items 10-20)	MUPH	5.88	8.88	8.58			
	MO	6.05	8.45	8.38			
Sub 4	MU	4.44	6.28	6.22	2,73	.26	n.s.
(Items 21-30)	MUPH	4.65	6.41	5.96			
	MO	3.45	5.55	5.75			

* The covariance analysis is not reported, since there are only two items in the subtest.

it may be that children learn enough about music outside of class to show improvement over a period of several months. No data bearing on this possibility are available. In addition, the possible effects of greater "test-wiseness" on the part of the children at the time of the post-testing and of the previous experience with the identical test cannot be assessed from the data at hand.

To determine whether or not substantial improvements on the MAT were being obscured by insufficient teaching in any of the treatment groups, mean total MAT scores at pre-test and post-test were computed for individual classes. These data are presented in Table 15. To accompany this information and to illuminate the improvements on the MAT relative to teacher effectiveness, the individual teachers were subjectively ranked by Dr. Greenberg on their musical background and conscientious application of the curriculum; furthermore, the children were subjectively ranked on the nature of the observed responses as the curriculum was taught. Highest rankings on all these variables were given to classes I and II, and the lowest rankings were given to classes III and IV. An inspection of the data presented in Table 15 indicates that the mean total scores for these highest and lowest ranking teachers fail to conform to their relative ranked position.

The difficulties in evaluating achievement gains from the music curriculum bring into focus the problem of music assessment with young children. At the time the MAT was constructed, there was no other available instrument at the preschool level to assess musical knowledge. Anecdotal reports by the testers indicated that the children enjoyed taking the MAT more than any other test, probably because of the movement and manipulands involved. Although the MAT had been designed to assess some of the content of the curriculum, as indicated above it has undergone no item analyses or other

Table 15

Mean Total Raw Scores for
Separate Classes on the MUAT

Group	Class	N	Mean Scores	
			Pre-Test	Post-Test
MU	II	12	18.67	29.00
	III	14	13.79	24.79
	IV	13	19.62	29.23
MUPM	I	10	20.40	29.00
	V	7	13.43	24.43
MO	VI	10	17.40	25.60
	VII	10	15.00	22.90

extensive statistical or experimental investigations. A test with higher reliability is clearly needed, and indeed it is possible that a totally different type of test would be more suitable.

The objectives of the preschool music curriculum included affective as well as cognitive understanding of music. Only certain of the cognitive components could be evaluated, even in a preliminary way, by the MAT. The affective component of the music curriculum was evaluated by teacher comment at the end of the year, based upon their impressions of the children's responses. The general comment by the five teachers was that the music curriculum contributed substantially to the children's affective understanding of music and musical experience.

Independent evaluations of the preschool music curriculum were arrived at by each of the four participating teachers, a Center staff consultant, Dr. Allen Trubitt, Chairman of the Music Department of the University of Hawaii, and Dr. Marvin Greenberg, music consultant for the project. Conclusions were reached through a series of evaluation meetings held in May and June, 1971, through completion of a Teacher Evaluation Questionnaire by the four teachers (see Appendix I), and through written evaluations by Drs. Trubitt and Greenberg.

The evaluation by Dr. Trubitt contained statements such as: "... (The) teacher's guide for the preschool music curriculum fills an important gap in the literature for both music and preschool education." "The teacher's guide is well organized and reads easily." "The musical fundamentals throughout the book are dealt with accurately and clearly." "The selection of the songs and listening materials must be described in superlatives. The materials are all of the highest quality from a musical standpoint." The conclusion reached by Dr. Trubitt was that the guide was "excellent...,

one which fills a real need in the literature, which will be of immediate use to preschool teachers, and which sets forth with high detail a comprehensive and coherent curriculum for music in the preschool."

Suggestions for improvements were also included in Dr. Trubitt's evaluation. For example, the teacher's guide might have been too difficult for teachers who lack musical background, and it should probably include more explicit instructions about how to encourage students to express their feelings about music. Additionally, Dr. Trubitt made a number of specific recommendations that would lead to substantial improvements in the guide as regards to clarity, emphasis, and the communication of musical understanding.

The four participating teachers, a Center staff worker, and the curriculum consultant were in agreement on the following basic points:

1. The curriculum is a marked improvement over "traditional" preschool music in comprehensiveness, use of materials, fostering the children's communication skills and responses, developing musical skills and conceptual understanding, and creating positive attitudes toward music.

2. The original guide, although comprehensive, can be improved by including more specific day-to-day teaching hints and lesson plans, and more songs representative of the ethnic background of the children.

3. The expressive-aesthetic nature of music makes this curriculum area of vital importance to the education of the preschooler, but, at the same time, makes it more difficult than many other curriculum areas for the average preschool teacher to handle.

4. The limited musical background of many preschool teachers makes adequate teacher training in both music content and pedagogy of paramount importance to the success of the program.

Evaluations also considered the value of large-group, small-group, and individual instruction; the use of teacher aides and parents in the program; the value of having music specialists handle the program; the copyright restrictions in the use of songs and recordings; needed equipment and materials; teacher insecurity with various aspects of the program; and related problems with teacher training.

At its present stage of development, the revised curriculum, Music for Preschool, together with the accompanying Songbook can be seen as a promising and unique attempt to transmit important aspects of our cognitive and affective understanding of music to young children. Content evaluations by teachers and by critics in the musical area are supportive of the design and structure of the curriculum. Attempts to implement the curriculum have led to a variety of suggestions for improvement, particularly with respect to the content of the guide and the training of teachers without adequate musical background. Evaluation of the cognitive and affective objectives in the curriculum has been difficult in view of the unavailability of adequate assessment instruments. Attempts should be made in future applications of the curriculum to closely assess the ongoing participation of the children with respect to the acquisition of specific behaviors in the cognitive and affective areas.

Since the projected work of the Hawaii Center on this curriculum must be discontinued for lack of funding, the manual, Music for Preschool, together with the accompanying Songbook, is to be regarded as a preliminary edition. Nevertheless, it contains a wealth of material and suggestions that preschool teachers should find highly useful and worthy of more extensive tryout.

CHAPTER VI

PROJECT D: DEVELOPMENT OF THE UNIVERSITY OF HAWAII PHYSICAL ACTIVITIES CURRICULUM FOR PRESCHOOL CHILDREN

Procedures

Instruction in physical activities at the preschool level may contribute to bases for self-concepts and attitudes toward physical activity of children that will later enhance motor skills and fitness levels appropriate for occupational demands and satisfying leisure. The Physical Activities for Preschool curriculum (Adkins, Curtis, & Crowell, 1971) is comprised of planned activities to promote physical growth and development, and expressive activities that may encourage self-confidence, a will to cooperate with others, and a general sense of well-being.

The instructional goals of the curriculum include development of the following physical areas: (a) strength, endurance, and flexibility; (b) perceptual-motor skills; (c) motor skills; (d) spatial-temporal-motor concepts; and (e) positive attitudes toward physical activity, social interaction, and the self. To proceed toward these objectives, daily lessons in three performance areas--locomotion, body control, and manipulation--were developed. The teachers who were to try out the program in its initial form were given prescriptions for lessons in a loose-leaf manual, so that they could sample from three color-coded sections. The intent was to present a systematic, yet varied curriculum of physical activities. Freedom for the teacher to select from any of the three sections on any day permitted sufficient flexibility for adjustment to the availability of space in a crowded physical plant and the restrictions on use of outdoor space due to weather. The manual was designed for classroom teachers who were not specifically trained in physical education.

Dr. Delores Curtis, a physical education consultant from the University of Hawaii, who had primary responsibility for the content of the curriculum, participated in preparatory work during the summer of 1970 and continued work with the Center on a part-time basis throughout the academic year.

The curriculum was introduced in four classes in Honolulu. Two of these were Head Start classes at the University of Hawaii Laboratory School and had the music curriculum (see Project C) introduced simultaneously (MUPH1 and MUPH2), whereas the other two were day-care classes in the Kalihi-Palama area and had the physical activities curriculum as the principal new or special activity in addition to their own traditional unstructured nursery school activities (PH1 and PH2). The MUPH classes alternated daily lessons of physical activities and music, with one of the regular classroom teachers handling each subject.

Teacher-training sessions were held in November to familiarize the teachers with the objectives and procedures specified in the curriculum. The teachers were introduced to the beginning sections of the curriculum at this time and were presented with later sections during subsequent training periods throughout the semester. These sessions were held approximately twice monthly and included discussions of content, techniques, problems with individual children, and the variations observed in different teachers' use of the materials.

The teachers were invited to attend a physical education conference, The Moving Child, held during the University of Hawaii's interim session in January. Much of the program of this conference was closely related to the curriculum.

Two special workshops in creative dramatics were conducted during February by Dr. Eloise Hayes, a consultant to the Center, for all project

teachers. The workshops were designed to integrate imaginative play and creative movement into the physical activities program and to give the entire curriculum a broader theoretical base than had previously been stated. Suggestions were made at the workshops for incorporating music and dance activities into the curriculum.

Samples: PH1 and PH2

The children in these two classes were generally from part-Hawaiian or Samoan backgrounds and for the most part resided in a low-income, high-rise dwelling. Some of the children were from the Palama area and were transported by cars. The children in PH1 were three-year-olds, whereas those in PH2 were four-year-olds.

The classes--located in the Family Services Day Care Center, a Model Cities Project--were held in a modern two-story cement building, where the younger children remained on the ground floor while the older children were assigned upstairs. The classroom for the younger children was large and contained areas partitioned for various activities, like painting, story-telling, block-playing, and doll-playing. The room was cheerful and well lighted, with good ventilation. The class for the older children was arranged somewhat differently. Instead of one very large room, there were three rooms--one large and two medium-sized. The large room was used for class activities, whereas the smaller rooms were devoted to group activities, such as art, music, or physical education. Carpeting of the rooms added comfort and helped to decrease noise. Jalousie windows allowed ample light and air, and walls were often used to display the children's art work. There were rest-room facilities on both floors, and on the ground floor was a kitchen and an office. In a large, grassy, fenced area outside, the children could play on swings, two jungle gyms, monkey bars, and large

cement cylinders, as well as in a sandbox. A large, smooth, concrete parking lot provided a place for the children to ride bicycles or wagons. The three teachers were assisted by eight aides who seemed to be well qualified for working with the children.

Results and Conclusions

Like the University of Hawaii Music for Preschool curriculum, Physical Activities for Preschool is to be regarded as in its initial stage of development, this first limited tryout having focused mainly on the feasibility of both the specific activities and teacher-training techniques introduced. Nevertheless, it seemed desirable to make some preliminary evaluative efforts, concentrating on several of the major objectives stated in the curriculum and on the identification of appropriate criterion measures. Achievement gains resulting from the curriculum were anticipated specifically in motor development and possibly in expressive language and motivation. The instruments selected to evaluate these effects were, respectively, the Bayley Scale of Motor Development (Appendix E), a test of physical-motor status relative to other children of the same age; the Test of Expressive Language (TEL) (Appendix A), an index of verbal expression; and the Gumpgookies, a test of motivation to achieve in school, administered only to the four-year-olds since it is not suitable for three-year-olds. The Scale of Motor Development was selected primarily because the specific tasks included appeared to be representative of the activities in the curriculum, but it had the disadvantage of having been standardized on a very small homogeneous sample of children who were measured repeatedly at three- to six-month intervals. These instruments were administered as pre-tests in October and as post-tests in May.

The analysis of the curriculum in terms of its major objective, to enhance the physical development of preschool children, was conducted by applying a simple analysis of variance with repeated measurements to scores on the Bayley Scale administered to Groups PH and MUPH. The results of these analyses are presented in Table 16. Age-normed Z-scores on the Bayley Scale did not shift significantly from pre-test to post-test, although the changes were in the expected direction. Thus no support was found for a conclusion that the curriculum facilitates motor development, if it can be assumed that the Bayley Scale is a suitable criterion. Since the pre-test means for each class were close to zero, the mean for the norming group, there was no evidence of delayed motor development to be remediated.

The analysis of the curriculum in terms of one of its secondary objectives, to develop expressive language, was conducted by contrasting on the TEL groups having the Physical Activities for Preschool curriculum with those having the Music for Preschool curriculum. Although there was reason to believe that both the music and the physical activities curricula would facilitate language development, it was of interest to determine which of these two curricula produced the greater gains in this area.

The results of the analysis of covariance on Groups PH, MUPH, and MU, with the pre-test as covariate and the post-test as the dependent variable, are presented in Table 17. No significant differences were found among the three groups in the adjusted mean scores on the TEL. The curriculum in physical activities apparently had little distinctive influence upon the level of expressive language ability relative to the music curriculum, although all groups showed change in a positive direction.

Table 16

Simple Analyses of Variance (Pre-Test vs. Post-Test)
on Bayley Scale of Motor Development
Age-Normed Z-Scores for Groups PH (N = 31) and MUPH (N = 24)

Group	Mean Scores		df	F	p
	Pre-Test	Post-Test			
PH	.58	.83	1,30	.12	n.s.
MUPH	.08	.37	1,23	.35	n.s.

Table 17

Analysis of Covariance on TEL Age-Normed Z-Scores for Groups PH (N = 30), MUPH (N = 23), and MU (N = 47)

Group	Mean Scores: Covariate (Pre-Test)	Mean Scores: Post-Test	Mean Scores: Adjusted Post-Test	df	F	p
PH	95.83	101.27	101.54	2,96	.15	n.s.
MUPH	98.30	103.91	102.48			
MU	95.47	100.72	101.25			

Another secondary objective of Physical Activities for Preschool was to affect the motivation to achieve in school of the children. This objective was evaluated by contrasting Groups PH, MUPH, and MU with an analysis of covariance on the Gumpgookies age-normed factor scores and total score. The pre-test was used as a covariate and the post-test as a dependent variable in this analysis. The results of the analyses of covariance are presented in Table 18. There were no significant differences between the adjusted means of the three groups on any of the Gumpgookies factor scores or the total score.

In an attempt to provide information on the appropriateness of each task for the age level for which it was intended, the investigators designed a simple recording form to rate each child's performance on each activity. The scale used to make the rating was based on the Cutteridge Rating Scale of Motor Skill (1939), reproduced in the introduction to the Physical Activities for Preschool curriculum, which defines performance levels in terms of four general levels of skill, viz., 0--No Attempt Made, 1--Habit in Process of Formation, 2--Basic Habit Achieved, and 3--Skillful Execution with Variations in Use. Whereas the teachers reported that the activities were simply presented and easy to use, they found it difficult to plan and teach the lessons and also record the response of each child on every curricular task. However, they were able to make general comments on each lesson about its appropriateness for the group. In order to get a sample of individual progress with the curriculum, a project staff member made regular observations and attempted to record the responses of each child and note any special interpretation by the teacher that seemed useful to include as a permanent part of the manual. These observations, which were largely anecdotal, were used to make some minor changes in some of the curricular tasks. These have

Table 18

Analyses of Covariance on *Gumpsookies* Factor and Total Scores for Groups PH (N = 13), HUPH (N = 20), and HU (N = 24)

Variable	Group	Mean Scores: Covariate (Pre-Test)	Post-Test	Adjusted Post-Test	df	F	p
GUMPF1	PH	100.85	98.31	98.23	2,73	.66	n.s.
	HUPH	97.70	100.35	100.37			
	HU	98.00	95.25	95.26			
GUMPF2	PH	97.54	100.00	100.00	2,73	1.71	n.s.
	HUPH	93.85	91.90	91.78			
	HU	99.23	97.98	98.03			
	HUPH	96.43	97.70	97.26			
	HU	92.16	95.54	95.93			
GUMPF4	PH	98.85	99.62	99.69	2,73	.23	n.s.
	HUPH	104.23	103.30	103.11			
	HU	99.02	101.80	101.86			
GUMPF5	PH	100.54	97.08	96.89	2,73	.59	n.s.
	HUPH	90.10	100.45	100.52			
	HU	92.20	101.09	101.19			
GUMPFT	PH	97.08	91.85	90.82	2,73	.50	n.s.
	HUPH	93.35	95.25	95.01			
	HU	90.25	94.32	94.73			

been included in the curriculum manual submitted with this report. The Gutteridge Rating Scale was deemed inappropriate for more rigorous evaluation.

Despite the abortive attempts at preliminary evaluation reported earlier, Physical Activities for Preschool can be conceived as a promising developmental program that with refinement and further field-testing may show substantial improvements in physical activity. The problem of showing gains relative to a comparison group on scales currently available will no doubt continue to be bothersome in future analyses. Physical skills are among the easiest of all behaviors for which to develop precise performance objectives, and there should be little difficulty in showing gains on a dependent variable that bears a relationship to the curriculum. Suggestions for future work on this program include the construction of a scale with age-normed scores based on large groups that would be appropriate as an external criterion measure of the content included in the teaching program. Techniques for ongoing evaluation by teachers of the needs and progress of individual children would also be desirable as a guide to the use of the curricular materials. The Gutteridge Scale proved too cumbersome to be useful within the classroom.

The secondary objectives in the areas of expressive language may be far too inexplicitly described in the curriculum to be developed with any reasonable expectation. The TEL has in other analyses (e.g., Project A) been responsive to interventions designed specifically to produce improvements in language achievement. There is reason to believe that refinement and explication of the language objectives in the physical-motor curriculum should result in improvements in the predicted direction. The secondary objectives in motivation may also be too inexplicitly stated in the

physical activities curriculum to produce changes in motivation to achieve in school. Although the Gumpgookies test has been used extensively to assess motivation effects, the test has not consistently reflected the specific motivation intervention, as noted in Project B. Thus, assessment of motivation effects stemming from the physical motor curriculum should be supplemented by other tests and possibly by rating scales.

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APPENDIX A

TEST OF EXPRESSIVE LANGUAGE (TEL): MANUAL

Experimental Edition (February, 1983)

Doris C. Grewell, George A. Paige, & Mary B. Boyce, University of Hawaii

The Test of Expressive Language is a short, easily administered, instrument for evaluating the level of expressive language functioning of the young child. The child is required to respond verbally to a series of graded questions about himself, his immediate environment, i.e., home and school, and his community. The test has 72 items that can be administered in about 12 minutes to children between the ages of three and seven years.

Whenever possible, items have been included which provide a use for label as well as function words. The five types of questions used are as follows:

1. What's this?
   The child is asked to label concrete objects either as parts of the body or objects in the examiner's bit. (Description of the bit follows.) The required verbal response is a noun.

2. What are I doing?
   The child is asked to name school-related actions performed by the examiner. The verbal response required is a verb.

3. What do you do with . . . ?
   The child is asked to name the functions of parts of the body and of concrete objects. The required verbal response is again a verb.

4. What do you . . . with?
   The examiner states the function of parts of the body or familiar objects and the child is asked to label the item in relation to. The verbal response called for is a noun but must be produced at this level in response to verbal cues only. Sometimes the nature comprehension of the function word.

5. The child is asked to state opposition, using an analogy format. The required verbal response is a qualifier or a relationship word.

Materials:
The TEL bit consists of a number of familiar objects from the home and school environments. They are contained in a partitioned envelope, such partitions conveniently labelled with the numbers of the items for which the materials within are used.

Section	Contents	Item Number
1	scratch pad, child's book, and pencil	5-13
2	ruler, eraser, pencil sharpener, chalk, and geometric shapes	14-22
3	envelope containing penny, nickel, quarter, dollar, and check	23-34
4	napkin, subtrey, comb, fork, and razor	35-39
5	3-inch squares of wood, paper, copper, plastic, and glass	40-49
6	7 cards illustrating opposites	50-54

Administration

The question cues are printed at the beginning of each group of items on the test blank. Items 1 through 7 require only that the examiner point to the specified part of his own person and ask "What's this?" to elicit the name of the body part. Alternative cues, such as "Tell me what this is" or "What is this called?", are permissible. In general, alternative cues may be used provided they do not give any additional information to the child. Always use the cue printed on the answer sheet first and note by putting a 1 immediately after the item if alternative cues were necessary.

For items 8 through 13 the examiner may also say, "Tell me what I am doing."

Items 23 through 29 can be asked using either you or me, i.e., "What do we do with our eyes?" or "What are your eyes for?"

For items 40 through 44 the cue question can be changed to "What do you use to write with?"

Items 45 through 48 can be presented using "What's this?" or "What's it made of?" to elicit a response indicating the material rather than shape.

For items 50 through 54, indicate the key words by pointing as you say them in the analogy. You may have the first key word on either the right or left side for the child and let the directions vary from one item to the next. All questions from 57 on are given with verbal cues only.

University of Hawaii
Center for Research in
Early Childhood Education
Spring 1971

APPENDIX B

MATERNAL ATTITUDE INSTRUMENT (MAI)

I--Manual of Directions

Introduction

Changes in maternal attitude toward child-rearing practices are expected to result from most parent intervention programs in early education. The continuous contact in which, typically, the mother is taught skills that strengthen her child's involvement and learning in his classroom activities are expected to have a cumulative impact upon the mother's attitudes. It is implicit in this arrangement that there are aspects of the mother's interactions with the child that either fail to support or are incompatible with the child's classroom instruction, even though the prevailing atmosphere in the home may be quite conducive to good social-emotional development.

The assessment of changes in maternal attitude accompanying an intervention program is difficult because the mothers generally wish to make a good impression upon the parent worker or evaluator. The mother enters the interview/evaluation session with a preconceived notion of what is expected of her and plays the role of a good mother even though she may behave quite differently in applied situations in the home. Determining what the mother actually does in real life situations by asking *in vivo* observations is extremely time consuming and expensive.

The difficulties of assessment of maternal attitude may be overcome in part by constructing a test situation in which the mother can honest readily involved and with which she can easily identify. Additionally,

the specific nature of the information requested should if possible be masked from the mother as a means of reducing the extent to which she plays the role of the good mother.

The Maternal Attitude Instrument (MAI) was developed with these qualifications in mind. The instrument consists of six pictures of child-rearing situations with which the parent can easily identify. The mother is asked structured questions about how she would approach a designated situation if it had occurred in her own home.

The areas upon which the questions focus have to do with the mother's attitude or practice concerning 1) her role as teacher 2) her sensitivity towards the child's feelings 3) her method of motivation 4) her method of reinforcement 5) her concept of the child's self-image. The predominant emphasis is on the parent's concept of her teaching role (5 out of 12 questions) since, this was a primary concern in the Individual Parent Program being evaluated by this instrument. The other areas coded are considered relevant in assessing the overall parent-child relationship.

Administration

The general procedure for administering this instrument is to 1) talk with the mother about what is happening in each picture and then 2) ask the mother how she would feel or what she would do in a similar situation. "Why" and "How" questions may be used for amplification if necessary.

First record the positions data on page 1 of the interview.

Then introduce the questions by saying "We are going to look at some pictures of children doing things and talk about them together." Present the book, turning to the first picture of the boys fighting

over the tricycle and ask the first question on the questionnaire."What is happening here?" Each picture has a lead question like this, to initiate the discussion.

Record the mother's responses verbatim. If they are not clear, use the cue, "Tell me more... Explain a little more..." as indicated in the questionnaire.

Go on to the next pictures and follow the same procedure.

Scoring

To assign a score to each question response, a five-point scale is used, with the middle point of three. The points below three reflect a negative maternal attitude and the points above three reflect a positive maternal attitude. The responses recorded at point three usually are judged to be matter-of-fact, or very general, neither negative nor positive. A score of two indicates a limited or somewhat negative response, often characterized by withdrawal, scolding, or some form of mild punishment. A score of one indicates a very negative response, which may be accompanied by physical or strong verbal force or in some cases by no attention to the child at all. A four indicates some attempt to respond constructively to the situation, either by mild teaching or in some instances, expressing reasonable expectations from the child. A five is scored for a response judged to show a high degree of constructive quality, e.g., a definite attempt at teaching, carrying through, being supportive, etc.

In three of the 12 questions, a three-point instead of a five-point scale was used. These were questions where the range of responses did not seem to require five distinct points. In these instances, the scale 1-2-3 was used in order to remain consistent with the other scale.

It should be noted that while the general characteristic of negtive below score three and positive above three applies to all scales, th specific criteria used for each scale are applicable only to the speific question being consi'ered.

Following is a description of a) the picture being used, b) the focus being considered c) the question asked and d) a list of pointsused in scoring.

MATERNAL ATTITUDE INSTRUMENT (MAI)

II--Administration Procedures

Picture: Boys fighting over tricycle.

Focus: Teaching role.

Question: Does this kind of thing happen at home with your Head Start child? What do you do?

Points:
1. Punishment (physical or strong verbal).
2. Withdrawal--punitive; active not relative to sharing, e.g., giving one child another toy.
3. Doing nothing; detached.
4. Letting children settle it first; following up if necessary; mild teaching.
5. Definite attempt to teach sharing concept.

****

Picture: Girl pouring milk; milk spilling.

Focus: Parent's sensitivity--awareness.

Question: Do things like this happen at home--sometimes when you are tired or in a hurry? What do you do?

Points:
1. Punishment (physical).
2. Scolding, blaming; using force, "Clean it up!"
3. No comment; ignoring; cleaning it up oneself.
4. Matter-of-fact reaction; asking the child to clean it up; expecting responsible reaction.
5. Accepting sympathetically as accident; assisting child in cleaning if needed; asking gleefully.

****

Picture: Girl pouring milk; milk spilling.

Focus: Obedience.

Question: Do you sometimes ask your child to do something he doesn't want to do? What do you do?

Points:

1. Force; threat (physical or verbal); psychological manipulation, e.g., "If you don't, I won't love you."
2. Nagging; bribing; giving in; mild punishment.
3. Matter-of-fact request.
4. Contingency management ("Do this so we can do that....").
5. Encouragement; being supportive; giving a reason; asking nicely with the expectation that the child will do it.

****

Picture: Girl pouring milk; milk spilling.

Focus: Teaching role.

Question: If this child wanted to pour juice again, what would you do or not do?

Points:

1. Negative response.
3. Affirmative, but no instructions; general warning.
5. Affirmative, giving specific pointers.

****

Picture: Boy pounding--wooden truck.

Focus: Teaching role.

Question: If your child came and wanted to make a truck like this one, what would you do or say?

Points:

1. Ignoring child; distracting child.
2. Negative response; passing off lightly.
3. Saying, "Yes, you go and do it" or "Go to brother or sister." Affirmative, but with no offer of help.
4. Sending child to someone with knowledge who will surely help.
5. Providing materials and help as needed. Carrying through at that time or making a definite commitment.

****

Picture: Boy pounding--wooden truck.

Focus: Teaching role.

Question: If your child wants to use something (scissors, paintbrush, etc.) and he doesn't know how, what do you do or say?

Points:

1. Negative response.
2. Negative, but giving a reason; e.g., "It's too dangerous."
3. Affirmative, but no instructions or supervision.
4. Affirmative, but confining use to child's materials; e.g., scissors, hammer.
5. Affirmative, demonstrating and giving help as needed.

****

Picture: Children doing chores in a classroom.

Focus: Motivation.

Question: (Referring to things a parent feels are appropriate chores for a child of this age) If you want your child to do one of these things, what do you do?

Points:

1. Force; threat (physical or verbal); psychological manipulation, e.g., "If you don't, I won't love you."
2. Nagging; hitting; giving in; mild punishment.
3. Matter-of-fact request.
4. Contingency management ("Do this so we can do the....").
5. Encouragement; being supportive; giving a reason; asking nicely with the expectation that the child will do it.

****

Picture: Children doing chores in a classroom.

Focus: Motivation.

Question: What if your child doesn't want to do what you ask of him?

Points:

1. Force; threat (physical or verbal); psychological manipulation, e.g., "If you don't, I won't love you."
2. Nagging; hitting; giving in; mild punishment.
3. Matter-of-fact request.
4. Contingency management ("Do this so we can do the....").
5. Encouragement; being supportive; giving a reason; asking nicely with the expectation that the child will do it.

****

Picture: Children doing chores in a classroom.

Focus: Reinforcement.

Question: What if your child does do what you ask of him?

Points:
1. Negative reaction; no reaction at all.
2. Limited cognitive, e.g., simple "Thank you, OK...," etc.
3. General praise, somewhat extended; e.g., "That's a good boy.... You did a good job."
4. Praise with physical or other appropriate reward, e.g., hug, pat, etc.
5. Recognition of specific actions or behavior being reinforced; reference to child's self-worth; e.g., "You put those things back in just the right place. I see you are learning how to be responsible."

Picture: Birthday party.

Focus: Child's self-concept.

Question: How do you feel about having a birthday party for a child of this age?

Points:
1. Negative, e.g., "Couldn't have one; too much trouble...."
2. Positive, with general expressions of child's good feelings, (make this feel good, happy; listen to have friends bring presents, etc.)
3. Dwelling some realization of child's need for feeling of self-worth, e.g., "Makes this feel important; to know people love him, etc."

Picture: Children playing.

Focus: Interdisciplinary experiences.

Question: Do you think play or school is good?

Points:
1. Negative, e.g., "No." "It's a waste of time."

2. Affirmations, but for the wrong reasons, e.g., "Sugar than bad, sets us a reason, gives relief from tension, gives the number a break, keeps them out of trouble."
3. Affirmations, general, e.g., "It's a fact." "They enjoy themselves," etc.
4. Indirect learning roles plays, e.g., sharing, getting along with each other, etc.
5. Indirect learning, e.g., role-playing, discovery of new concepts, etc.

Purpose: Initiative playing.

Focus: Teaching role.

Questions: If you placed your child into pretend, what would you tell them?

Relate: 1. Identical characteristics (one concept), e.g., labeling, shapes, size, color, role, sections, categories, function of equipment.
2. Asking questions; observations; or lack thereof of the concepts mentioned above; specific observations.
3. Focus on more concepts mentioned; specific observations.

APPENDIX A

Sep., 1970

MOTIVATION RATING SCALE

Beverly S. Adkins, University of Hawaii
Bruce L. Bellett, Fredkin University

Child's ID: _____ School: _____ Type: _____

Name: _____ Teacher: _____

Date: _____

Instructions: Indicate how the child behaves by making a check mark in one of the spaces under the categories A, B, C, and D. Keep in mind that in every class some children are less highly motivated than others. Hence your ratings for different children should differ considerably.

	Very much like	Fairly much like	Very little like	Not at all like
	A	B	C	D
1. Be enthusiastic about school				
2. Know steps trying a difficult task				
3. Acts as if he will succeed				
4. Forgets what is expected of him				
5. Pays little attention to stories				
6. Asks reasons for things				
7. Persists toward a goal				
8. Explanation amount of work rather than quality				
9. Wins to help the teacher				
10. Be willing to work for a later reward				
11. Wins to speak				
12. Aspires high standards to what he does				
13. Is always wanting to do something				
14. Lacks confidence in our ability				
15. Likes to make things				

APPENDIX D

University of Hawaii
Center for Research in
Early Childhood Education
Spring 1970

MOTIVATION RATING SCALE

Adapted from O. E. O. Behavior Inventory
Summer, 1966

Child's ID#_____ School_____ Type_____

Name_____ Teacher_____

Date_____

Instructions: Please indicate as accurately as possible how this child behaves by marking one of the four responses to each question. Base your response to every item on your personal observation and experience with the child.

	Very much like	Some-what like	Very little like	Not at all like
	1	2	3	4
1. Is easily distracted by things going on around him.				
2. Is methodical and careful in the tasks that he undertakes.				
3. Tries to figure out things for himself before asking adults or other children for help.				
4. Appears to trust in his own abilities . .				
5. Seems disinterested in the general quality of his performance.				
6. Sticks with a job until it is finished. .				
7. Goes about his activities with a minimum of assistance from others				
8. Works earnestly at his classwork or play; does not take it lightly.				
9. Does not need attention or approval from adults to sustain him in his work or play				
10. Does not like to be interrupted when engaged in demanding activities, e.g., puzzles, painting, constructing things. .				
11. Requires the company of other children; finds it difficult to work or play by himself				
12. Demonstrates imaginativeness and creativity in his use of toys and play materials				

APPENDIX E

Scale of Motor Development Work Sheet
Nancy Bayley

ID#_____ School_____ Date_____ Yr. Mo. Da.

Name_____ BD_____

Examiner_____ CA_____

Situation:

F Walks tiptoe, a few steps_____

F Walks a line (3 meters): Approx._____
Exact_____
Tiptoe_____
Eyes closed_____
Backward_____

B Walks upstairs: With help_____
Marks time_____
Alternates_____

B Walks downstairs: With help_____
Marks time_____
Alternates_____

C Walking board: Tries_____
Walks one foot on_____
Stands both feet on_____
Alt. part way_____
Alt. full length_____
seconds (3 trials)_____

D Aufstehn (I, II, or III)_____

A Stands on one foot: With help R_____
L_____
Alone (time), R_____
L_____

L Stands toe to heel: eyes open_____
eyes closed_____

M Stands feet together on toes: eyes open_____
eyes closed_____

J Hops on one foot: Part way R_____
L_____
(Describe) 6 feet R_____
L_____
10 feet R_____
L_____

K Ball Throw (3 trials)_____

K Ball Catch (3 trials) Arms_____
Two hands_____
One hand_____

G Jumps from height of: 20 cm._____
30 cm._____

G'Distance jump from ht. of 30 cm. (3 trials)_____

G'Jump to tiptoes from 30 cm. (3 trials)_____

N Jump and reach (3 trials)_____

H High jump (highest success)_____

Institute of Human Development, University of California, Form D-22

Research Form

A SCALE OF MOTOR DEVELOPMENT
Two to Six Years
by Nancy Bayley

M.1

Case No._____

Individual Record

Name_____ Sex_____ Date of Birth_____

Test	Examiner	Date	Hour	Age	Point Score	Sigma Score
1						
2						
3						

Cumulative Score	Age Placement--months	Test Items	Situation	Scores Test 1	Test 2	Test 3
47	19.9	Stands on right foot with help	A			
48	19.9	Stands on left foot with help	A			
49	20.3	Walks upstairs with help	B			
50	20.5	Walks downstairs with help	B			
51	22.5	Tries to stand on walking board	C			
52	22.5	Aufstehn II	D			
53	24.3	Walks upstairs alone; marks time	B			
54	24.5	Walks downstairs alone; marks time	B			
55	27.6	Walks with one foot on walking board	C			
56	28.0	Jumps off floor; both feet	E			
57	29.2	Stands on left foot alone	A			
58	29.3	Stands on right foot alone	A			
59	30.1	Walks on tiptoe	F			
60	31.0	Stands on walking board with both feet	C			
61	31.3	Walks on line; general direction	F			
62	32.1	Jumps from bottom step	G			
63	32.7	Aufstehn III	D			
64	32.8	Attempts step, while on walking board	C			
65	33.2	Walks backward three meters	F			
66	35.5	Walks upstairs, alternating forward foot	B			
67	36.2	Walks tiptoe three meters	F			

A SCALE OF MOTOR DEVELOPMENT, Individual Record, cont. M. 1

Cumulative Score	Age Placement--months	Test Items	Situation	Scores Test 1	Test 2	Test 3
68	37.1	Jumps from height of 30 cm.	G			
69	37.3	Distance jump--10 to 35 cm.	G'			
70	38.0	Walking board--alternates part way	C			
71	38.5	Keeps feet on line, three meters	F			
72	39.7	Distance jump--36 to 60 cm.	G'			
73	41.5	Jumps over rope less than 20 cm. high	H			
74	48.4	Distance jump--61 to 85 cm.	G			
75	49.3	Hops on right foot, less than two meters	J			
76	50.0	Walks downstairs--alternating forward foot	B			
77	50.0	Jumps over rope 20 cm. high	H			
78	50.0	Jumps to tiptoe from second step	G			
79	54.0	Catches ball in arms	K			
80	54.5	Hops on left foot, less than two meters	J			
81	55.5	Stands toe to heel, 10 to 19"	L			
82	56.0	Walking Bd. Alternate full length (over 14")	C			
83	56.5	High jump, 20 to 23 cm.	H			
84	57.0	Walks a line, eyes closed	F			
85	57.2	Stands on right foot, 5 to 9"	A			
86	57.5	Stands on left foot, 5 to 9"	A			
87	58.0	Hops on right foot 2 meters	J			
88	59.0	Jump and reach 6 to 9 cm.	N			
89	59.5	Walking board length in 6 to 9"	C			
90	60.3	Hops on right foot 3 meters	J			
91	61.5	Throws ball into basket (1 of 3 trials)	K			
92	62.0	High jump 24 to 27 cm.	H			
93	62.5	Hops on left foot 2 meters	J			
94	63.5	Stands on right foot 10 to 14"	A			
95	63.6	Hops on left foot 3 meters	J			

A SCALE OF MOTOR DEVELOPMENT, Individual Record, cont. M. 1

Cumulative Score	Age Placement--months	Test Items	Situation	Scores Test 1	Test 2	Test 3
96	64.0	Stands toe to heel 20 to 29"	L			
97	64.0	Jump and reach 10 to 13 cm.	N			
98	66.0	Walking board in 3 to 5"	C			
99	66.1	Stands on left foot 10 to 14"	A			
100	66.2	Distance jump 86 to 110 cm.	G'			
101	66.5	High jump 28 to 31 cm.	H			
102	67.0	Stands toe to heel, eyes closed 5 to 9"	L			
103	68.5	Catches ball with both hands	K			
104	69.0	Stands on toes, eyes closed 10 to 19"	M			
105	70.5	Stands toe to heel, eyes open 30 to 39"	L			
106	71.0	Stands on right foot 15 to 19"	A			
107	71.5	Stands on left foot 15 to 19"	A			
108	72.2	Stands toe to heel, eyes open 40 to 59"	L			
109	72.3	High jump 32 to 35 cm.	H			
110	74.0	Jump and reach 14 to 17 cm.	N			
111	74.2	Stand on left foot 20 to 29"	A			
112	74.3	Stand on right foot 20 to 29"	A			
113	77.0	Stand on toes 20 to 29"	M			
114	78.0	Stand toe to heel, eyes closed 10 to 19"	L			
115	79.0	High jump 36 to 39 cm.	H			
116	80.0	Walking board. Less than 3"	C			
117	80.0	Stand left foot 30 to 39"	A			
118	80.5	High jump 40 to 43 cm.	H			
119	80.5	Stand toe to heel, eyes open, 60"	L			
120	81.2	Stand toe to heel, eyes closed, 20 to 29"	L			
121	82.0	Stand on toes, 30 to 39"	M			
122	84.0	Stand right foot 30 to 39"	A			

University of Hawaii
Center for Research in
Early Childhood Education
Fall, 1970

APPENDIX F

MUSIC ACHIEVEMENT TEST
(Experimental Edition)
TEST ADMINISTRATION AND MATERIALS

Test Kit:

Five pictures	Book
Metal can	Two notched rhythm sticks
Wood	Toy xylophone and mallet
Pencil	

The room should be as free as possible of noise or music, and must have space for movement. The child should sit across the table from the examiner.

Repeating the question: Encourage the child to continue working on each item. The activities should be of such a nature that they are fun for most children and will keep their attention. ANY ITEM MAY BE REPEATED ONCE IF THE CHILD DOES NOT UNDERSTAND OR RESPOND, EXCEPT WHERE NOTED IN THE ADMINISTRATION INSTRUCTIONS.

Instruments: Keep instruments out of sight by the examiner's seat. If the child wishes to play the instruments, tell him that he will have a chance to play them in a few minutes.

Rapport: Because of the expressive nature of many of the musical activities, it is essential that an atmosphere of freedom and acceptance be established.

Scoring: Indicate the number of points achieved for each item on the score sheet. When in doubt as to how the child responds, judge his final response. Often a person must listen a while to music before responding accurately.

The Tape Recorder: Place the child close enough to the tape recorder so that he can hear it but not touch it.

SAMPLE TEST ITEMS

TEST ITEMS	Tones in Environment
1. Materials: Metal can, piece of wood, book, pencil.	
Say: LET'S SEE IF YOU CAN MAKE MUSIC WITH SOME OF THESE. If further encouragement is needed,	
Say: PICK UP SOME OF THESE THINGS AND MAKE SOME INTERESTING SOUNDS WITH THEM.	
Scoring:	
2 points--Uses pencil or wood and hits anything rhythmically; makes any pattern of long, short sounds; or makes a series of sounds by hitting together two or more given objects. The child must make at least four continuous sounds.	2
1 point--Hits or strikes object no more than three times, without any rhythmic pattern or involvement.	1
0 points--Produces no sound; puts object to mouth and makes sounds with voice only; makes no response.	0

Fall, 1970

MUSIC ACHIEVEMENT TEST

Child ID# _____ Sex M F

Name _____

School _____ Class # _____

Teacher _____

Examiner _____ ID# _____

	Year	Month	Day
Date of Test	____	____	____
Birthdate	____	____	____
C. A.	____	____	____

C. A. in months _____

Score Sheet

TONES IN ENVIRONMENT (4)

1. _____
2. _____

Sub Score _____

EXPRESSIVE ELEMENTS (12)

Tone Color
3. _____
4. _____
5. _____

Dynamics
6. _____
7. _____
8. _____
9. _____

Sub Score _____

RHYTHM (18)

Beat
10. _____
11. _____
12. _____
13. _____

Tempo
14. _____
15. _____
16. _____
17. _____

Melodic Rhythm
18. _____
19. _____
20. _____

Sub Score _____

MELODY (18)

Pitch and Size
21. _____
22. _____
23. _____
24. _____

Melody and Pitch
25. _____
26. _____
27. _____
28. _____
29. _____
30. _____

Sub Score _____

TOTAL SCORE _____

Time ended _____

Time begun _____

Test time _____

FACTORS AFFECTING TEST PERFORMANCE
MUSIC ACHIEVEMENT TEST

A. The Child:

Shy, Hesitant Inhibited				Enthusiastic, Very Responsive
1	2	3	4	5
Was unwilling to participate; seemed not to understand most directions; easily distracted.	Was hesitant, yet tried some activities.	Tried about half the items, although not with full vigor and attention.	Actively participated in most activities, yet occasionally fearful.	Participated fully, with freedom and enjoyment.

B. The Test Environment

Very Poor				Very Good
1	2	3	4	5
Noisy, distracting, frequent disruptions.	Frequent noise, often loud, but not enough to make testing uncomfortable.	Some disruptions, some outside noise but not enough to disrupt test, generally quiet.	Few disruptions, with only a minimum of outside noise.	Very quiet, no outside noise, good atmosphere.

Examiner's Remarks:

APPENDIX G

WOOFLES *

A Test of the Affective Constituent of Motivation To Achieve in School

INSTRUCTIONS TO THE EXAMINER:

(Welcome child.)
(Hold Woofles behind your back.)

Speak: I have a friend I would like you to meet. His name is Woofles.

(Bring Woofles out from behind your back.)

Speak: Would you like to say hello to Woofles?

(Allow child to greet Woofles.)

Speak: This is Woofles' first day in school.
He wants to know how you feel about school.

(Have Woofles whisper in your ear.)

Speak: Oh, Woofles wants to ask you some questions and show you some pictures. Listen to each question carefully and look at the picture. Then answer yes or no. Shall we begin?

(Put Woofles down near child.)
(Present each of the 48 items in the order arranged and record the child's responses to each item on the record sheet provided.)

(After all the items are presented, have Woofles whisper in your ear.)

Speak: Woofles wants to thank you for your help. Thank you very much.

(Bid child farewell.)

* Developed at Fordham University under the direction of Bonnie L. Ballif, under a subcontract with the University of Hawaii Center for Research in Early Childhood Education, 1970-71.

Woofles Items and Composition of Illustrations

Item	Composition*		
Woofles wants to know if you like...			
1. school to let out early.	MB	MW	FP
2. doing the best you can in school.	MB	FP	FW
3. to learn new words.	MB	FW	FP
4. to throw books on the floor.	MW	FB	FP
5. to listen to a story.	MP	FW	FB
6. to stay home from school.	MP	MB	FW
7. your friends at school.	FP	MB	MW
8. to sneak behind the teacher's back.	MW	MP	FB
9. to play games at school.	MW	FP	FB
10. to go to school.	MB	FW	FP
11. to say I don't know.	MB	FW	FP
12. the teacher to call on someone else.	FW	MB	FP
13. to start a puzzle and then leave it.	FB	MW	MP
14. your teacher.	MP	FB	MW
15. to help clean up.	MP	FB	FW
16. it when work time is over.	MP	MB	FW
17. to tear up books.	MP	FB	FW
18. to write your name.	MP	MW	FB
19. to say mean things to your teacher.	FW	MP	MB
20. to stay away from school.	MW	FB	FB
21. to make things in school.	FP	FW	MB

*M = male
F = female
B = black
W = white
P = Puerto Rican

22. to fool around in school.	FB	MP	FW
23. to watch the teacher working.	FP	MB	FW
24. to listen to the teacher.	MP	FB	FW
25. to knock down blocks.	FB	FW	MP
26. to bother other kids.	MW	MB	FP
27. to show others how to work.	FB	MP	FW
28. to play with school toys.	FW	FP	MB
29. to do bad work in school.	MP	FW	MP
30. to look at a book in school.	FW	FB	MP
31. to throw your school work.	MB	FP	MW
32. to forget about school.	MB	MP	FW
33. to count.	MW	FB	MP
34. to do hard work.	FP	MB	MW
35. to scribble your number work.	FW	FP	MB
36. to learn the days of the week.	MB	FP	FW
37. your teacher to tell you your work is wrong.	FB	MW	MP
38. to read a book.	FP	FB	MW
39. to do the same things in school.	FP	MW	MB
40. to help your teacher.	FW	FB	MP
41. to do nothing in school.	MW	FP	MB
42. to learn something in school.	FW	MP	FB
43. your teacher to be away from school all day.	FW	FP	MB
44. your teacher to get angry.	MB	FW	MP
45. to play school.	FB	MP	FW
46. to show your work to others.	FW	MB	FP
47. to walk away from reading.	MW	FB	FP
48. to do what the teacher tells you to do.	FB	MP	FW

WOOFLES

RECORD SHEET

Name _____ Date of Examination _____

Date of Birth _____ School _____

Sex _____ Grade _____ Ethnic Group _____

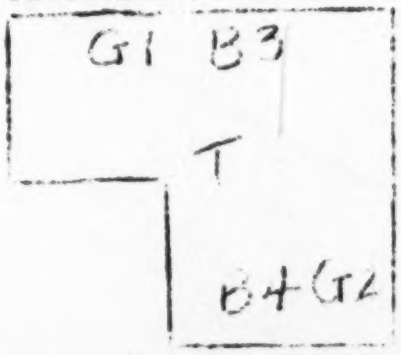
Items	Yes	No	Items	Yes	No
1.			25.		
2.			26.		
3.			27.		
4.			28.		
5.			29.		
6.			30.		
7.			31.		
8.			32.		
9.			33.		
10.			34.		
11.			35.		
12.			36.		
13.			37.		
14.			38.		
15.			39.		
16.			40.		
17.			41.		
18.			42.		
19.			43.		
20.			44.		
21.			45.		
22.			46.		
23.			47.		
24.			48.		

APPENDIX H

DOLL PLAY*

A Test of the Affective Constituent of Motivation To Achieve in School

Situation #1



Here is the classroom.
Here are the children.
Here is the teacher.
(Have child close his eyes as E puts dolls in place.)

All the children have some work to do. These children are looking around (point to G-1, B-3). These children are working (point to B-4, G-2).

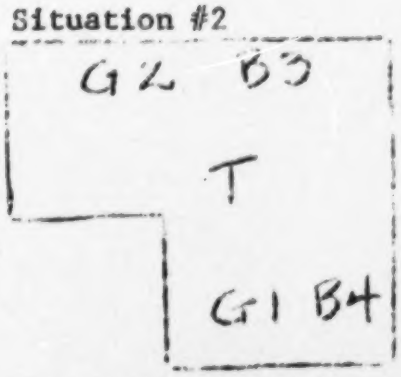
1. Where does your doll like to go? With the children looking around (point) or with the children working (point)?

2. Why does he (she) like to go there?

3. What does your doll like to do?

4. What is he (she) doing now?

Situation #2



Here is the classroom.
Here are the children.
Here is the teacher.
(Have child close his eyes as E puts dolls in place.)

These children like to learn (point to G-1, B-4).
These children like to play all the time (point to G-2, B-3).

1. Where does your doll like to go? With the children who like to learn (point) or with the children who like to play (point)?

2. Why does he (she) like to go there?

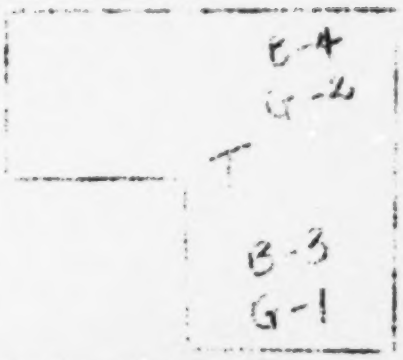
3. What does your doll like to do?

4. What is he (she) doing now?

*See footnote at the bottom of page 135.

DOLL PLAY

Situation #3



Here is the classroom.
Here are the children.
Here is the teacher.
(Have child close his eyes as E puts dolls in place.)

It's playtime.
These children are watching others playing (point to B-4, G-2).
These children are watching teacher drawing (point to B-3, G-1).

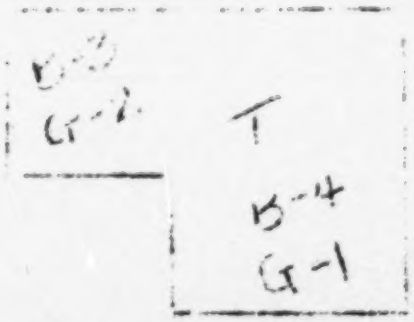
1. Where does your doll like to go? With the children who are watching others playing (point) or with the children who are watching teacher drawing (point)?

2. Why does he (she) like to go there?

3. What does your doll like to do?

4. What is he (she) doing now?

Situation #4



Here is the classroom.
Here are the children.
Here is the teacher.
(Have child close his eyes as E puts dolls in place.)

All the children should be looking at books.
These children are playing (point to B-3, G-2).
These children are reading (point to B-4, G-1).

1. Where does your doll like to go? With the children who are playing (point) or the children who are reading (point)?

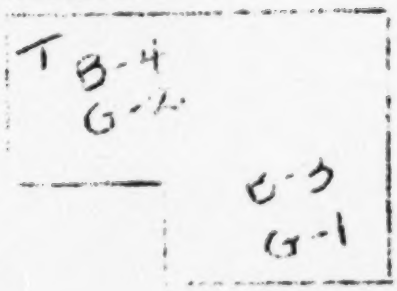
2. Why does he (she) like to go there?

3. What does your doll like to do?

4. What is he (she) doing now?

DOLL PLAY

Situation #5



Here is the classroom.
Here are the children.
Here is the teacher.
(Have child close his eyes as E puts dolls in place.)

These children are helping the teacher (point to B-4, G-2).
These children are playing with things (point to B-3, G-1).

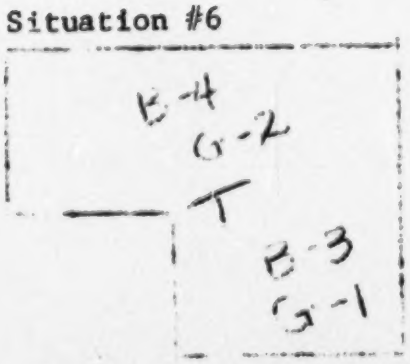
1. Where does your doll like to go? With the children who are helping the teacher (point) or the children who are playing with things (point)?

2. Why does he (she) like to go there?

3. What does your doll like to do?

4. What is he (she) doing now?

Situation #6



Here is the classroom.
Here are the children.
Here is the teacher.
(Have child close his eyes as E puts dolls in place.)

These children say their mothers make them go to school (point to B-4, G-2).
These children say they want to go to school to learn (point to B-3, G-1).

1. Where does your doll like to go? With the children who say their mothers make them go to school (point) or with the children who want to go to school to learn (point)?

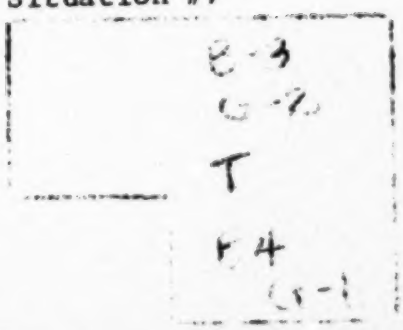
2. Why does he (she) like to go with these children?

3. What does your doll like to do?

4. What is he (she) doing now?

DOLL PLAY

Situation #7



Here is the classroom.
Here are the children.
Here is the teacher.
(Have child close his eyes as E puts dolls in place.)

The teacher is reading a story.
These children stay to hear it all (point to B-3, G-2).
These children go outside (point to B-4, G-1).

1. Where does your doll want to go? With the children who stay to hear the story (point) or those children who go outside (point)?

2. Why does he (she) like to go there?

3. What does your doll like to do?

4. What is he (she) doing now?

* Developed at Fordham University under the direction of Bonnie L. Ballif, under a subcontract with the University of Hawaii Center for Research in Early Childhood Education, 1970-71.

APPENDIX I

University of Hawaii
Center for Research in
Early Childhood Education
Spring, 1971

Name_____

School_____

Yrs. taught preschool_____

Yrs. taught music (any kind)___

MUSIC FOR PRESCHOOL

TEACHER EVALUATION QUESTIONNAIRE

Please read each question carefully. This is in no way an evaluation of you. We want to find out how well the curriculum works for teachers. Please be as candid and honest as you can.

Please circle one, unless otherwise directed. Omit questions which don't apply to you.

1. How do you feel the Head Start Music Curriculum compares to the music classes you have held in the past?

   1-Poorer than in past 2-About the same 3-Better than in past

Questions 2-17 apply to the Teacher's Guide.

2. 1-Not comprehensive enough 2-Fairly comprehensive 3-Very comprehensive

3. 1-Not clear enough 2-Fairly clear 3-Very clear

4. 1-Not explicit enough 2-Fairly explicit 3-Very explicit

5. 1-Not at all easy to use 2-Fairly easy to use 3-Very easy to use

6. 1-Not at all helpful in planning lessons 2-Fairly helpful in planning lessons 3-Very helpful in planning lessons

7. 1-Not at all helpful to my teaching 2-Fairly helpful to my teaching 3-Very helpful to my teaching

8. 1-Lacking details 2-Fairly detailed 3-Too detailed

9. 1-Not clear on how to sequence daily activities 2-Fairly clear on how to sequence daily activities 3-Very clear on how to sequence daily activities

10. 1-Hard to use for balancing the program 2-Somewhat hard to use for balancing the program 3-Not hard to use for balancing the program

11. 1-Very hard to use in finding information 2-Somewhat hard to use in finding information 3-Not at all hard to use in finding information

12. 1-Very unorganized 2-Somewhat unorganized 3-Not at all unorganized

13. 1-Lacking in specific activities 2-Somewhat lacking in specific activities 3-Not at all lacking in specific activities

14. 1-Not clear as to how to plan lessons 2-Fairly clear as to how to plan lessons 3-Very clear as to how to plan lessons

15. Please write the following abbreviations by the section in the guide which is:

a. MV -- Most valuable
LV -- Lease valuable

b. MU -- Most useful
LU -- Least useful

(Any one section may have a mark from a. and from b.)

__ __I. Section I--Introduction (includes the objectives and discusses organizing for instruction)

__ __II. Section II--General Teaching Suggestions (includes ways to teach listening, singing, etc.)

__ __III. Section III--Materials and Activities (includes recommended activities for all ages and gives level songs and recordings)

16. For teachers with adequate background, I feel the guide would be:

1-Poor 2-Fair 3-Good

17. For teachers with limited background, I feel the guide would be:

1-Poor 2-Fair 3-Good

Questions 18-24 apply to the Tape Recordings:

18. 1-Not appropriate 2-Fairly appropriate 3-Very appropriate

19. 1-Not at all easy for the children 2-Fairly easy for the children 3-Very easy for the children

20. 1-Not at all easy for me to learn 2-Fairly easy for me to learn 3-Very easy for me to learn

21. 1-Poorly accepted by the children 2-Fairly well accepted by the children 3-Very well accepted by the children

22. 1-Rarely enjoyed 2-Sometimes enjoyed 3-Often enjoyed

23. 1-Rarely used 2-Sometimes used 3-Often used

24. 1-A poor selection 2-A fair selection 3-A good selection

Questions 25-31 apply to the <u>songs</u> in the songbook.

25. 1-Not at all appropriate 2-Fairly appropriate 3-Very appropriate

26. 1-Not at all easy for the children 2-Fairly easy for the children 3-Very easy for the children

27. 1-Not at all easy for me to learn 2-Fairly easy for me to learn 3-Very easy for me to learn

28. 1-Poorly accepted by the children 2-Fairly well accepted by the children 3-Very well accepted by the children

29. 1-Rarely enjoyed 2-Sometimes enjoyed 3-Often enjoyed

30. 1-Rarely used 2-Sometimes used 3-Often used

31. 1-A poor selection 2-A fair selection 3-A good selection

Questions 32-34 concern your ease in applying the curriculum.

32. I had:

1-Many problems applying the curriculum 2-Some problems applying the curriculum 3-Few problems applying the curriculum

33. Which of the following do you feel contributed to any problems you had with the curriculum? (check all that apply)

_____a) My lack of music background

_____b) Inadequate or infrequent consultant help

_____c) A poor, over-complicated guide

_____d) Poor quality music materials which came with the curriculum

_____e) Inadequate classroom facilities

_____f) Lack of children's interest

_____g) Music learnings which were too difficult for the children

34. Training in how to use this program was:

1-Insufficient 2-Sufficient 3-More than sufficient

Questions 35 and 36 are concerned with possible improvements of the curriculum.

35. The curriculum needs to be reorganized by: (check all that apply)

_____a) Changing the song selections; should include (please print):
fewer of the following kinds of songs:

_____

more of the following kinds of songs:

_____

_____b) Changing the record selections (this refers to the separate list of suggested records)
Should include (please print):
fewer of the following kinds of records:

_____

more of the following kinds of records:

_____

_____c) Including step-by-step daily lesson plans with specific songs and recordings to use for each lesson

_____d) Making the guide less technical

_____e) Providing more information for the teacher's understanding of music fundamentals

_____f) Providing fewer teaching suggestions for the development of concepts

_____g) Providing a few sample lesson plans

_____h) Providing fewer teaching suggestions for the development of musical concepts

_____i) Including a week-by-week lesson guide for the development of concepts and the proper balancing of activities (This would not be like specific lesson plans)

36. Check the section(s) of the guide which you feel could be deleted:

_____a) Section I--Introduction

_____b) Section II--General Teaching Suggestions

_____c) Section III--Materials and Activities

37. Check the activity(ies) which you most enjoyed teaching:

_____a) Listening

_____b) Singing

_____c) Rhythmic Movement

_____d) Playing instruments

_____e) Creating

38. Check the activity(ies) which the children most enjoyed doing:

_____a) Listening

_____b) Singing

_____c). Rhythmic Movement

_____d) Playing instruments

_____e) Creating

39. Do you have any other criticisms about the curriculum? (please print)

_____

_____

_____

40. Do you have any other suggestions for improvement of the curriculum? (please print)

_____

_____

_____

41. I used the Teacher's Guide (please check one)

_____Whenever I had music

_____Only as a reference

_____Infrequently

_____Not at all

42. I used the Songbook (please check one)

_____Whenever I had music

_____Every so often

_____Infrequently

_____Not at all